THE ATLANTIC WALL (3)

The Südwall



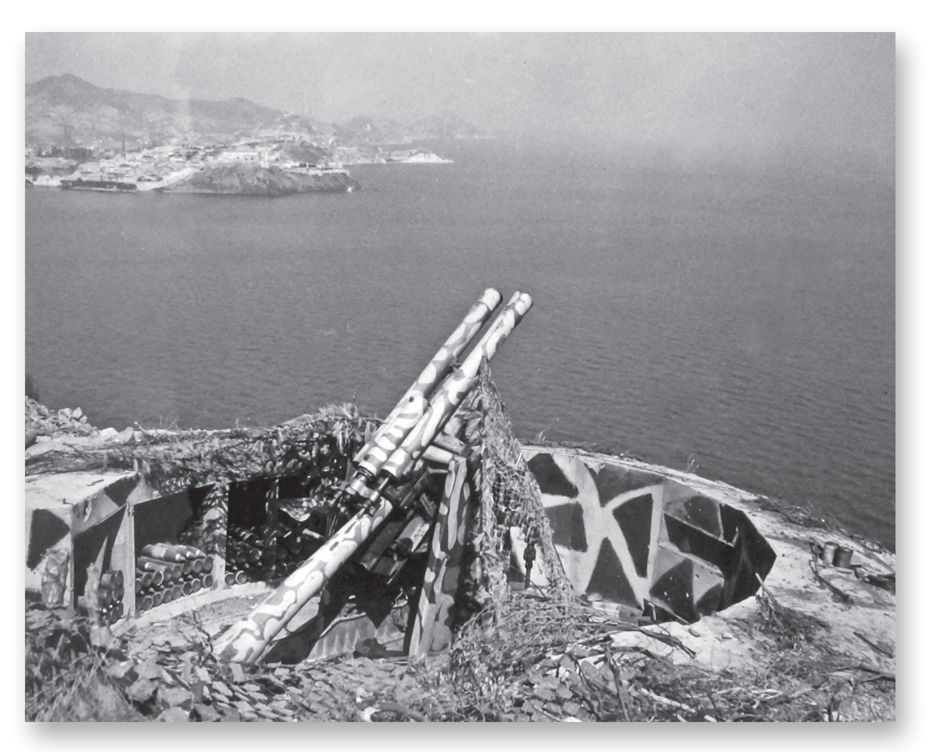
STEVEN J. ZALOGA

ILLUSTRATED BY ADAM HOOK

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THE ATLANTIC WALL (3): THE SÜDWALL

France's Mediterranean Coast 1944



STEVEN J. ZALOGA ILLUSTRATED BY ADAM HOOK

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AUTHOR'S NOTE

For brevity, the traditional conventions have been used when referring to units. In the case of German units, 2./HKAR 1290 refers to the 2nd Battery, Army Coastal Artillery Regiment; II./HKAR 1290 refers to the 2nd Battalion, Army Coastal Artillery Regiment. Many of the weapons used on the Südwall were captured types. The Germans gave war-booty weapons their own designations, often based on the original designation but with a suffix o identify the origins: (f) French, (r) Soviet, (i) Italian, etc. So for example, the French 138mm Mle 1910 naval gun was designated as 13.8cm KM 1910 (f). For simplicity and standardization, this book gives gun tube diameters in mm even though the Germans sometimes used cm during World War II. Another designation worth mentioning is the Italian style of identifying guns which differs from most other European armies. The Italian designation such as 75/18 identifies the gun tube diame er first in millimeters (so in this case, 75mm) and the gun tube length in calibers (so in this case L/18). Unless otherwise indicated, all the images come from the author's collection.

GLOSSARY

Bauform	construction plan
EB	*Eisenbahnbatterie*: Railroad Battery
Festung	Fortress
GR	Grenadier Regiment
Heer	German Army
HKAA	*Heeres-küsten-artillerie-abteilung*: Army Coastal Artillery Regiment
Kriegsmarine	German Navy
MAA	*Marine-artillerie-abteilung*: Navy Artillery Regiment
MKB	*Marine Küsten Batterie*: Navy Coastal Battery
OB	*Offene Bettung*: open platform
OB West	*Oberbefehlshaber West*: High Command West
Regelbau	construction standard, sometimes abbreviated as R when used with a particular plan, for example R621.
SK	*Sonderkonstruktion*: special design, not *regelbau*
StP	*Stützpunkt*: strongpoint (company-sized)
Tbts.K	*Torpedoboots-Kanone*: destroyer gun
Tobruk	a class of small bunkers with circular openings for a crew-served weapon; officially calle *Ringstand*
Tonne	metric ton (1,000kg; 2.204lb)
Vf	*Verstarkfeldmässig*: reinforced field position such as a obruk
Wehrmacht	German armed forces including army, navy, air force and Waffen-SS
Westwall	German fortific tions created in the late 1930s on the French–German border, also known as the Siegfried Line
WN	*Widerstandnest*: defense nest (platoon-sized)

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INTRODUCTION

In early 1944, the Wehrmacht anticipated a major Allied landing on the Mediterranean coast coinciding with the main amphibious assault on the Channel coast. Berlin was well aware that the Seventh US Army had been idle since the Sicily landings in July 1943, and the major units of the Free French Army were massing in the ports of Algeria. In the spring of 1944, German intelligence networks in Italy reported a heavy concentration of Allied shipping in Naples and other Italian ports. But there was no consensus on where the Allies might strike. Some senior commanders suspected it would be in the Bay of Genoa, others suspected a landing near Toulon to strike up the Rhône Valley. Both the Luftwaffe and Kriegsmarine in the Mediterranean had been crippled in the previous year of fighting. In desperation, the Wehrmacht hoped that an extension of the Atlantic Wall fortification effort to the Mediterranean coast would provide a sufficient bulwark against the forthcoming Allied amphibious invasion.

This book details the Wehrmacht's attempts to fortify the northern Mediterranean coast in 1943–44. The long-delayed construction of the Südwall (South Wall) on the southern French coast had been complicated by the contentious politics in the northern Mediterranean between Vichy France, Italy, and Germany. This program later was extended along the northwestern Italian coast as the Ligurian Wall.

The Südwall saw its trial by combat during Operation *Dragoon*, the Allied invasion of southern France in August 1944. The defenses on some landing beaches were intense enough to drive off the American landing force. But as was the case in Normandy, the majority of the coastal defenses were quickly overcome. The immediate objectives of the *Dragoon* landings were the ports of Marseille and Toulon. These were so heavily defended by strong coastal gun bunkers that an amphibious landing was out of the question. Instead, the First French Army captured the cities by attacks from the weakly defended land side. The Südwall was abandoned in late August 1944 when Berlin decided to allow Heeresgruppe G to withdraw into

The Rade d'Hyères battery, also known as the Mauvannes battery, was a Kreigsmarine strongpoint armed with four 150mm Tbts.K C/36 destroyer guns mounted in M272 casemates. The battery was overwhelmed by a "mad attack" by the French Commandos d'Afrique on August 18, 1944.

central France. The defenses on Italy's Ligurian coast continued to be reinforced through the autumn of 1944 due to concerns that the Allies might stage another amphibious landing near Genoa or La Spezia to cut off Italy at the Apennines. This never occurred, and the Allies contented themselves with periodic bombardment of the Ligurian Wall by air and sea to prevent interference with coastal convoys.

DESIGN AND DEVELOPMENT

As one of the world's ancient commercial centers, the northern Mediterranean coast has been fortified since antiquity. In modern times, the French coast saw surges in construction related to naval rivalries in the region. The main ports on the French Mediterranean coast were fortified during the Vauban era, and many of these forts have remained to the present day. France also fortified its naval bases in North Africa, especially the main base at Bizerte in Tunisia. There was a wave of modernization of the coastal forts in the late 19th century to adapt them to modern artillery.

Prior to World War I, the French Navy concentrated its fortification efforts on its four main naval bases at Cherbourg, Brest, Toulon, and Bizerte. Curiously enough, some of the first shots exchanged between France and Germany at the outset of the Great War involved French coastal forts on the Mediterranean. The German cruisers *Goeben* and *Breslau* exchanged fire with French batteries at Bône and Philippeville on the Algerian coast during their transit to Turkey on August 4, 1914. Further modernization of the Mediterranean defenses was put on hold after Italy decided to join the Entente with France and Britain. Indeed, this decision led to a French plan to reduce the armament around Marseille in 1915 in favor of reinforcing its naval base at Toulon. This changed again in 1915–16 after German U-boats began appearing in the Mediterranean. In 1917, a program began to modernize the coastal artillery as part of a network of PDCSM (*postes de dèfense contre les sous-marins*: antisubmarine defense posts). The complexion of the defenses began to shift from a concentration on heavy coastal guns to fight against enemy battleships to more numerous, small-caliber, dual-purpose guns to deal with the submarine and aircraft threat.



The French Navy's modernization of its coastal defenses in the interwar period included its North African bases. This is Batterie La Railleuse near the Pointe de la Tour northwest of Saafi in French Morocco, armed with four 130mm guns. This battery was one of the main objectives of Sub-Task Force Blackstone of the US 2nd Armored Division during the Operation *Torch* landings in November 1942. The battery's guns were spiked before the surrender.

In the wake of the Great War, the French defense ministry began a debate over the future of Mediterranean coastal defenses. There was some interest in placing more emphasis on the ALVF railroad artillery (*artillerie lourde sur voie ferrée*) in place of traditional fixed artillery sites, but this was never fully implemented. The 1921 coastal defense program envisioned a 15-year program which would absorb about 10 percent of the French naval budget. Budget problems in the mid-1920s pushed off its completion beyond 1942, but there was some important work completed around the Toulon naval base. Besides a modernization of antisubmarine defenses, considerable attention was paid to the new requirements of antiaircraft defense. Antiaircraft gun sites, using pedestal-mounted 75mm guns, sprouted up along the coast.

The outbreak of war in 1939 led to the mobilization of IIIe Région Maritime, the regional naval command headquartered in Toulon. At the time, the principal concern was not German naval action in the Mediterranean but rather Italian operations against the French Mediterranean coast. The first major attack on the French coast occurred on June 1, 1940, when the Luftwaffe staged an air raid on Marseille with 25 bombers. French antiaircraft guns fired 1,058 rounds, but proved unable to strike even a single aircraft. An attack the next day by eight German bombers led to the loss of a single aircraft with 829 rounds fired. The Italian army launched an attack over the Alps into France, but was largely unsuccessful. French Mediterranean coastal defenses played no major role in the 1940 campaign.

The MAA.615 battery at Cap Gros was fairly typical of the newly constructed naval gun casemates, consisting of a 127mm SK C/34 naval gun in a casemate that was completed in April 1944. This particular battery was involved in an engagement on June 21, 1944 when the Free French submarine *Curie* surfaced about 3km off the oast and began shelling the German batteries.



Under the terms of the armistice with Germany after the 1940 defeat, the French Mediterranean coast remained under the control of the French government in Vichy. France also signed a separate armistice agreement with Italy that led to a demilitarization of portions of the Mediterranean coast, and the disarmament of some coastal defense batteries. On November 8, 1942, Allied forces staged Operation *Torch* and landed in French North Africa on the Atlantic and Mediterranean coasts. Although there was some fighting between US and French forces in the days after the landing, Vichy French military units soon agreed to a ceasefire. The quick switch of allegiance by the French forces infuriated Hitler. On November 11, 1942, the Axis forces launched Operation *Anton II*, the occupation of the remainder of Vichy France. This was anticipated by the French Navy, and a wave of sabotage preceded the arrival of German troops, including the scuttling of many of the major French warships in Toulon and the spiking of many coastal gun batteries.

Three Kriegsmarine coastal artillery regiments, Marine-Artillerie-Abteilung 602, MAA 682, and MAA 685, began to arrive on the French Mediterranean coast in late November 1942 to take control of the French coastal defenses. The Kriegsmarine took over the major ports on the western coast from Port-Vendres near the Spanish frontier to Le Ciotat east of Marseilles, while the army's Heeresgruppe Felber took control of the sections of the coast between the major ports. Under an agreement with Italy, the 4a Armata under Gen. Vercellino took control of the French Mediterranean coast from Le Ciotat to the Italian frontier, including Toulon.



The Italian Army did a modest amount of coastal defense construction while in control of the French Riviera coast after November 1942. This is a typical Italian dome-shaped pillbox on the Boulevard du Midi Louise Moreau in the La Bocca section of Cannes. The pillbox was concealed on the side facing the sea with a false wall.

In January 1943, Marinegruppenkommando West in Paris dispatched the Marine-Festung-Pioner-Stab Südfrankreich (Naval Fortification Engineer Staff – South France) to Marseille to manage the modernization of the French coastal defenses. This headquarters established four subordinate headquarters at Port-Vendres, Sète, Marseille, and Toulon to oversee local construction efforts. Initial work was undertaken by two naval engineer fortification battalions, Marinefestungspioner-Batallion 316 in Perpignan and Mar.Fest. Pi.Btl. 360 in Marseille. They were soon followed by the Organization Todt (OT) paramilitary construction organization that was responsible for the Atlantic Wall.

The OT staff played a supervisory role in fortification construction. Decisions on the configuration of strongpoints was decided by the Kreigsmarine or army, and executed by Organization Todt. Much of the actual construction work was contracted out to French firms. At its peak in late 1943, there were only about 1,420 German OT personnel in southern France overseeing the work of about 23,000 construction workers. The workforce was mostly French or French colonials. There were large numbers of French colonial troops from the 1940 campaign who had not been repatriated including those from Indochina, Madagascar, and Senegal, and these troops were assigned to the OT programs. Management of the program was handled on the army side by the Inspekteur der Landesbefestigung West (Inspector of Land Defense – West) and on the navy side by the Marine Oberfestungspioner Stab (Navy Senior Fortification Engineer Staff) in Paris. There was a tendency by Organization Todt to favor the navy programs around the ports and to ignore the army programs elsewhere on the coast since it was easier to manage the big, concentrated projects near the harbors compared to the scattered little bunkers and pillboxes elsewhere.

The initial construction program was allotted two million cubic meters of concrete for February–June 1943 and there was a clear understanding that this effort should not impact the more important Atlantic Wall effort on the Channel coast. So, some items such as special armor doors that were in short supply were restricted to the Channel coast. The initial Mediterranean project



involved the modernization of existing French strongpoints, and the start of coastal defenses for the German infantry divisions deployed along the coast. This included command posts, ammunition bunkers, and Flak pits. The Italian Army began its own modest program along the French Riviera coast, building some pillboxes for beach defense. This was an extension of a 1942–43 Italian army program for anti-invasion defenses on Sicily, Sardinia, and the Italian coast prompted by concern over the Allied advances in Tunisia and the expectation that the Allies would launch amphibious attacks against Italian soil in the summer of 1943.

The Italian dimension

Coastal fortification along Italy's Ligurian coast in the period before and after the Great War paralleled the French efforts and placed the primary emphasis on the defense of major ports such as Genoa and La Spezia. There were some distinct differences from the French programs. The coast to the east of the French Riviera was lined with steep, rocky cliffs that made the construction of fortified batteries difficult and expensive. As a result, Italy made use of artillery trains that could operate along the coastal railways. The Italians strongly favored the use of dual-role guns that could be employed in an anti-ship and antiaircraft role. The northern coastal defense sector, the Alto Tirreno from the French border to Livorno (Leghorn), had 86 gun batteries and 198 guns at the time of the Great War. During the interwar years, the most substantial modernization on the Ligurian coast occurred at the naval base at La Spezia and the port of Genoa while many of the older gun batteries scattered along the coast were retired. During the 1940 campaign, a French naval task force sailed from the Toulon area to conduct Operation *Vado*, a naval bombardment of the port of Genoa on June 14, 1940. The weak Italian response to this attack highlighted the shortcomings of the Italian coastal defense system in the Bay of Genoa and led to some modernization in 1940–42.

In July 1943, the Allies staged the Operation *Husky* amphibious assault on Sicily with the intention of knocking Italy out of the war. Operation *Husky* led to Mussolini's abdication and clandestine Italian efforts to



STUTZPUNKT BATTERIE DE GIENS, 1./MARINE-ARTILLERIE-ABTEILUNG 627, TOULON

This is a good example of the repurposing of French naval forts for the Südwall. This old French fort on the Presqu'île de Giens peninsula had been completed in 1904 and was originally armed with a pair of 240mm Mle 1876 guns. It was variously called the Batteries d'Escampo Bariou or Vigie de Giens. This particular gun position, No. 2, consisted of a massive concrete gun pit with a substantial underground ammunition cavern. The ammunition was retrieved via an elevator located at the rear of the gun pit as shown in the cross-sectional drawing here. A third battery at the site was planned, but in the event was never completed and the guns were dismantled shortly before World War I.

When the site was taken over from the Italians by the Kriegsmarine in the autumn of 1943, it was derelict. The Kriegsmarine located four war-booty French 164mm KM 93-96 (f) guns in the Toulon arsenal and deployed two of them on the existing French fortified gun pits and wo others further east. These were configu ed in fortress style on the Affut C Mle 1923 turreted pedestal mounting. The guns were first est fi ed in December 1943, and the battery was fully operational by February 1944 with 12./Marine-Artillerie-Abteilung 627. The battery had a garrison of two officers, 19 NCOs, and 127 enlisted men. On July 25, 1944, the battery was reorganized, becoming Stutzpunkt Tol 046 and redesignated as 1./MAA 627 under Oberleutnant Paul Ehlert. Shortly before the *Dragoon* landings, three of the 164mm guns were dismounted and sent to the new Six-Fours and Vogelberg gun batteries, leaving only a single gun. The battery was heavily bombed on August 16, 1944 and then shelled a few days later by the French cruiser *Emile Bertin*, which fi ed about 110 rounds of 6in. gunfi e against the fort. After the war, the old fort was used as the site for a coastal radar. The camouflage scheme he e is based on black and white photos so the specific olors are conjectural.

withdraw from the war. Under the pretext of reinforcing the Italian coast, in late August 1943, the Italian army began discussions with the Wehrmacht over the withdrawal of Italian occupation forces from the French Riviera. This included the withdrawal of about 80 artillery batteries deployed for coastal defense between Menton near the Italian frontier to Bandol to the west of Toulon. On learning of the plans to begin the withdrawal on September 2, 1943, the army's HKAR 920 requested that Berlin dispatch a significant number of additional coastal artillery units to France to make up for the expected shortfall. Berlin refused these requests, well aware of Italian subterfuge and their likely defection from the Axis.

On September 8, 1943, the Italian government officially announced its withdrawal from the war. Berlin activated its prearranged Fall Achse (Plan Axis) to disarm the Italian armed forces. The 4a Armata on the French Riviera coast was disbanded. However, the Italian troops stationed with the 80 coastal artillery batteries were given the option of surrendering and being sent to prisoner-of-war camps, or voluntarily remaining on duty under German command. Many of the Italian artillery troops agreed to remain in the coastal batteries, at least for the time. Life in a coastal artillery unit on the French Riviera was more comfortable than life in a German prisoner-of-war camp.

The Italian defection led to the confiscation of most of the Italian artillery equipment, but Berlin was not entirely confident of the reliability of the Italian troops and decided to replace them when possible. So for example, HKAR 920 on October 1, 1943 had 1,585 German troops and 1,172 Italian auxiliaries, but by November 25, 1943 this had been reduced to 1,000 German troops and only 32 Italian auxiliaries. As a result of the seizure of so much Italian artillery equipment, most of the Heer artillery batteries on the French Riviera coast were equipped with Italian guns.



The 13. Batterie, HKAR 1291 originally had its four Schneider 75mm KM 08 (f) naval guns in the 19th-century Batterie de la Maure in the Vallauris area of Cannes. In early 1944 as part of the casemate program, the guns were transferred to the new Batterie de la Corne d'Or with four new H671a casemates. All of the casemates received *trompe-l'oeil* camouflage o disguise them. This casemate had trees painted on it and was located in the gardens of "Les Hespérides".

The Italian defection from the Axis prompted Hitler to order the construction of the new Südwall on the French Mediterranean coast to defend against a likely Allied invasion sometime in 1944. The Südwall was no longer considered a secondary priority, but received equipment that might otherwise have gone elsewhere to the Atlantic Wall. These resources generally came from fortification programs on the Atlantic coast facing the Bay of Biscay, not from programs along the English Channel, which retained their high priority status. The Südwall plan was included in Hitler's November 1944 Führer Directive No. 51 outlining anti-invasion preparations.

Through 1943, most Atlantic Wall gun batteries had been deployed in traditional open "kettle" gun pits. However, in late 1943, Allied air attacks along the northern French coast had knocked out several German coastal gun batteries. So in December 1943, Hitler ordered the start of a program to encase the main gun batteries in full concrete casemates to be completed by April 1944, the earliest date for an anticipated Allied amphibious assault against Fortress Europe. Hitler ordered that 400 gun positions on the new Südwall be incorporated into this program. This formally appeared in a directive from OB West on January 12, 1944. By that date, 214 gun positions were under construction on the coast, so the order added a further 186 positions. In addition, the Admiral der französischen Südküste (Admiral of the French South Coast) headquarters ordered that a further 56 naval gun positions be brought up to the improved fortification standards.

THE PRINCIPLES OF DEFENSE

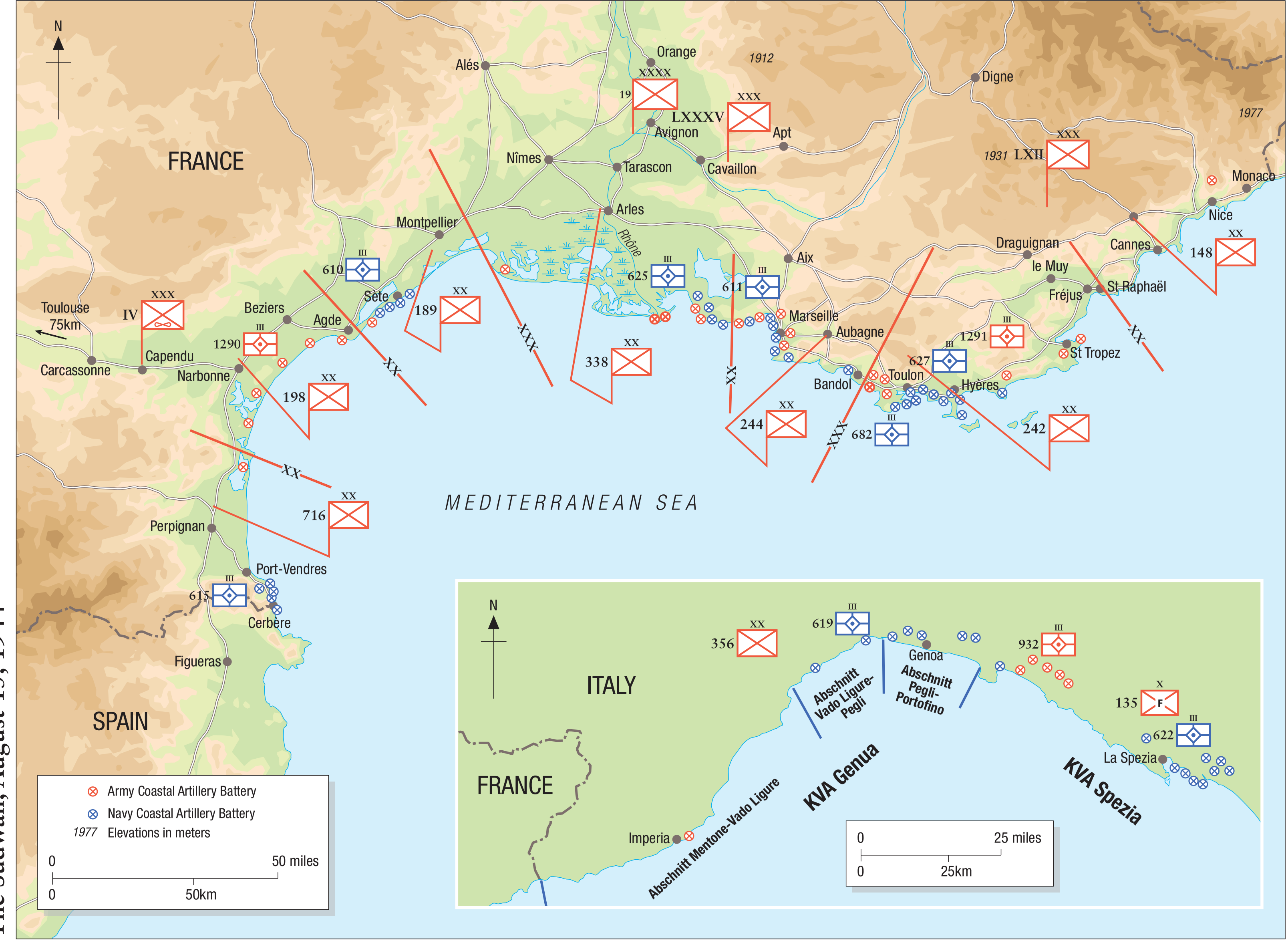
The German defense of the northern Mediterranean coast was hampered a lack of consensus over likely Allied objectives, and disharmony between traditional German defense doctrine and Hitler's concepts of coastal defense.

German defense planning through 1942 considered that the most likely target of any Allied invasion on the northern Mediterranean coast would be a major port. This viewpoint was undermined in 1943 by the Allied landing on Sicily that avoided the heavily defended ports in favor of open beaches. New Allied technologies permitted landings on open beaches that could temporarily serve logistical needs until nearby ports could be captured. This pattern was followed at Salerno in September 1943 and at Anzio in January



The Batterie Niolon-Bas near Marseilles was a typical French Navy battery taken over by the Kriegsmarine as MKB Niolon/ Stützpunkt Mar 9. It was armed originally with four 120mm Mle 1878 (Affût Mle 1916 version Marine) with armored shields as seen here. The battery was reconstructed in 1944 with four M272 casemates armed with Canon 90mm de DCA Mle 1926-30 antiaircraft guns used in an improvised anti-ship role.

The Südwall, August 15, 1944



1944. This had serious implications for any coastal defense program patterned on the existing Atlantic Wall, since it implied that enormous lengths of coastline would have to be fortified. There were no resources to do so, either in terms of manpower or materiel. The defection of Italy led to the loss of 80 divisions from the Axis order of battle. More than half of these troops were serving on occupation duty in the Balkans and elsewhere, and Germany would have to make up the shortfall. Royal Air Force attacks on the Ruhr industrial area in the autumn of 1943 had led to massive damage and forced the diversion of construction resources away from the Atlantic Wall program. In addition, Hitler ordered the start of an extensive construction program to build launch sites for the new V-weapons in France and the Low Countries which also diminished construction resources for the Südwall.

As in the case of the Atlantic Wall on the Channel coast, the Südwall program lacked a focus because there was no consensus in Berlin regarding the most likely Allied landing areas. Right up to the time of the Operation *Dragoon* landings on August 15, 1944, there was continual disharmony in intelligence assessments. For example, on August 12, with the Allied invasion fleet already underway, the deputy Wehrmacht chief of staff, Gen. Walter Warlimont, argued that they would soon land on the Italian Ligurian coast. Gen. Erich Petersen, commanding IV Luftwaffe Feld Korps in the Languedoc



The venerable French 75mm "soizante-quinze" Mle 1897 was widely used in the Südwall in secondary roles. This example on an Affût 1916 pedestal mount was deployed in a Bh47a gun pit, part of a pair used on the Malbousquet heights overlooking the Toulon Arsenal as part of the Hafenkommandant Toulon Stp. Tor 066 strongpoint.

region of the French coast, argued that the landings would take place between Narbonne and Sète, on the western side of the French coast. Gen. Friederich Wiese, commander of 19. Armee (AOK 19) that defended the entire French Mediterranean coast, argued that the force would land in France between the rivers Var and Rhône, on the Riviera coast. Rundstedt's OB West headquarters agreed with Wiese. Even though Wiese was correct that the Allies were aiming for the Riviera coast, he misjudged the landing areas, expecting them to be centered between Marseilles and Toulon with the airborne landings on the La Crau plains. In fact, the landing would occur much further east.

Although German commanders accepted the need for some coastal defenses, the amount of resources poured into the Atlantic Wall and the Südwall ran contrary to usual German military doctrine. The Atlantic Wall and the Südwall were the brain-child of Adolf Hitler, not the Wehrmacht. Generalfeldmarschall Albert Kesselring who commanded German forces in Italy at the time reflected on German fortification priorities:

> German military traditions have given appropriate weight to fortification construction. So it is very striking to recall that under Adolf Hitler's direction, no rear defense lines were built either in the East or the West. Presumably, Hitler was afraid that they would have a detrimental influence on his principle



The numerous 19th-century fortific tions around the Mediterranean were rebuilt for use by the Südwall. The old Fort Cépet on the St Mandrier peninsula of Toulon was reconstructed to serve as a Flak base to defend the Cap Cépet batteries. This is an overhead photo of 6./Flak-Abteilung 355, located in Stutzpunkt Tor 069 in Fort Cépet showing two of its four 88mm Flak 18 guns.

to fight for every inch of ground, which he ordered time and time again. On the other hand, his attitude toward coastal defense was the opposite. No amount of work done in this connection was sufficient to satisfy him. Even the Atlantic Wall, due to its focus on a linear construction along the coast without any intention for defense-in-depth, gave clear evidence of the essentially wrong concept of obstinately holding on to every inch of ground.

The commander of German forces in the West, Genfeldmarschall Gerd von Rundstedt was even more scathing: "The Atlantic Wall was an enormous bluff, less for the enemy than for the German people. Hitler never saw the Atlantic Wall, not even one part of it! He was satisfied if Organization Todt reported that so many tons of steel and so many cubic meters of concrete had been used."

Hitler had a visceral enthusiasm for fortification after his experiences as a young infantryman in the trenches in World War I. He had been provoked into the original plan for the Atlantic Wall by British commando raids along the French and Norwegian coasts. The massive scale of this construction program was completely out of proportion to its tactical value. At the heart of this controversy was the incompatibility of the Atlantic Wall and Südwall schemes and army tactical doctrine. This is evident when examining the German tactical response to Allied amphibious attacks in the Mediterranean theater in 1943–44. Rather than tie down vast resources in a linear defense of the Italian coast, the Wehrmacht did not immediately contest the landings at Sicily, Salerno, and Anzio. Instead, once the landings had taken place, the German commanders mobilized their mechanized forces and staged a violent counter-attack against the beachhead. The same tactics would have been employed in Normandy and southern France but for the Atlantic Wall and Südwall.

Another problem with the Südwall was the parochialism of the German combat arms. There was no unity of command for the coastal defenses. The Kriegsmarine was primarily interested in fighting a naval campaign. The naval coastal batteries were designed for the engagement of enemy warships. Each gun battery was configured as a land-locked destroyer with four turreted guns and a fire control center. While this made them very suitable for shore defense against ships, these batteries were very vulnerable once an enemy force landed since they were not adequately protected against close attack by infantry. The army mocked the navy batteries as "battleships of the dunes."



The Kriegsmarine gun casemates often received elaborate camouflage treatment such as this M272 casemate armed with a 150mm Tbts.KC/36 destroyer gun of the Rade d'Hyères battery of 3./ MAA 627.

The German Army (Heer) coastal batteries were conceived in 1942 without adequate consideration of the coastal defense mission. Many batteries were placed close enough to shore to be used in direct fire engagements against enemy landing forces. The original batteries were deployed in "kettle" gun pits that provided them with full 360-degree traverse, but with no protection from either air or naval attack. Their fire control systems were the same as field artillery and so they had little accuracy when engaging moving enemy warships at long range. The army deployed its coastal gun batteries as "a string of pearls" to serve as an economy-of-force expedient. In 1942–43 there was not enough infantry to defend the entire coastline of Fortress Europe, while a gun battery could offer a basic minimum of defense for a sector about 10km in either direction. To minimize costs, most of the coastal gun batteries were equipped with obsolete or war-booty artillery, and manned by overage or medically unfit troops.

The Wehrmacht high command squabbled about who controlled the guns. Army doctrine stressed the need for unity of command in a land battle, but the Kriegsmarine was distressed about the poor quality of army fire control and wanted to maintain jurisdiction over its own gun batteries. Under Führer Directive 40 on March 23, 1942, Hitler imposed a half-baked compromise. The Kriegsmarine would be responsible for control of all coastal artillery while engaging enemy targets at sea, and then control would revert to the army once the enemy force was ashore. This satisfied no one and the Kriegsmarine continued to construct gun batteries without sufficient land defenses while the army ignored Kriegsmarine pressure to improve its fire controls for naval engagements.

As a result of these disagreements, the late start of the Südwall program, and a general lack of resources, the Mediterranean fortification program resulted in very erratic defensive coverage, usually dictated by the availability of existing French fortifications. As a result of this lack of consensus, the Südwall was deployed along the entire coast, significantly diluting its strength. The new German defenses tended to be strongest on the Languedoc coast to the west of the Rhône estuary since construction had started there after the November 1942 suppression of Vichy French control. New fortification on the Riviera coast was less extensive due to Italian control of the coast in November 1942–September 1943. However, the area around Marseille and Toulon was very well protected due to prewar French efforts, even if only modestly upgraded by the Südwall program.

In January and February 1944, Hitler began to assign "*Festung*" (Fortress) status to some key locations, especially major ports. This meant that the *Festung* would be defended "to the last man." Marseille and Toulon were both given the *Festung* status.

A simple method to create a defense point was to mount a surplus tank turret on a Ringstand. The most common type on the Südwall used PzKpfw II turrets, armed with a 20mm gun. This *Panzerdrehturm* used a turret from a PzKpfw II Ausf. B or C, upgraded with a commander's vision cupola. This turret was mounted on a Bf.237 Ringstand and it was located in defense nest WN Mar 063 in the Fort Saint-Jean area of Marseille.



Army fortification standards

German fortification technology evolved between 1918 and 1944 in the direction of greater and greater standardization. The Great War made clear the value of prepared concrete fortifications to defend against modern artillery. During the late 1930s, the army's fortification engineer office (Festungpioner) in Berlin developed a family of standardized bunkers for the new Westwall fortified line along Germany's western frontier.

The army usually categorized its fortifications into several categories. The basic category was the field position (*Feldmässig*) which was a simple earth and wood structure such as a trench or dugout, usually without overhead cover. The next step up was the reinforced field position (*Verstarkfeldmässig*) that used steel-reinforced concrete but was not entirely bomb-proof due to a lack of overhead cover. This category included many common coastal defense structures such as the small Tobruk bunkers and "kettle" open gun pits. The next category of fixed bunkers (*Ständig*) was used to categorize bomb-proof, enclosed bunkers such as those first erected on the Westwall in the late 1930s.

A set of standards for steel-reinforced concrete was adopted to offer a range of protective options. *Bauform* E (construction standard) fortifications were based on walls and ceilings 5m thick but this standard was uncommon and used mainly for strategic command posts such as the Führer bunkers. The highest level for tactical fortifications was A which used a 3.5m basis, and this was confined to large, high-priority structures such as the U-boat bunkers, a few heavy gun casemates and special military hospitals. Most Südwall gun casemates and their associated ammunition and fire control bunkers were built to the B standard which was 2m thick, proof against artillery up to 210mm and 500kg bombs. Many minor bunkers such as the ubiquitous Tobruks were built to the slightly lower B1 standard with 1 to 1.2m thickness since these structures were partially buried.

The fortification engineers attempted to minimize the amount of steel necessary in construction so aside from the steel reinforcing bars (rebar), steel plate and especially steel armor plate was kept to a minimum. A standardized family of small armored cupolas, doors, and firing posts had been developed during the Westwall program and these were used on the Südwall as well after its priority was raised after September 1943.

Some Westwall designs were used on the Atlantic Wall and Südwall, but several new series of standardized bunker emerged in 1942–43, optimized for coastal defense. There is some disparity in how these designs are identified, so for example, the "611" bunker design is variously called Bauform Nr. 611 (construction plan 611); R611 (Regelbau 611: construction standard 611) or H611 (Heer 611: Army 611) to distinguish army bunkers from air force (L: Luftwaffe) and navy (M: Kriegsmarine) bunker designs. There were about 700 of these standard designs of which about 250 were used on the Atlantic Wall and Südwall. It should be mentioned that these designs were often modified in the field to better match local terrain contours. Besides the standardized designs, there were localized variations of standard plans as well as entirely new designs, sometimes identified with a SK suffix for *Sonderkonstruktion* (special design).

The standard plans covered a variety of functional types. These are by no means the only categories of defensive fortifications, but cover the main types.

Gefechtsstände	Command post
Leitstände	Fire control post
Beobachtungstände	Observation post
Nachrichtenstände	Communication post
Kampfstände	Combat post
Schartenstände	Artillery casemate
Ringstände	Tobruk
Unterstände	Bunker

Organization Todt fortifications, Mediterranean Coast 1944		
Type	**Planned**	**Completed**
Ammunition bunker	337	150
Command bunker	28	14
Observation bunker	34	16
Hospital bunker	22	18
Communication bunker	10	2
Gun casemate	482	381
Open gun platform	47	30
Field fortification	584	281
Total	1,544	892

Pace of Südwall construction (permanent bunkers)	
13 March 1944	639
4 April 1944	671
1 May 1944	702
4 June 1944	942

TOUR OF THE SITES

The French Mediterranean coast had fewer fortified positions than other portions of the Atlantic Wall in northern and western France due to its late start in the autumn of 1943. The Südwall had about 1.4 fortifications per km compared to about two per km in the other Atlantic Wall sectors. On the other hand, the windfall of war-booty French and Italian coastal artillery meant that the Südwall had more coastal gun positions than the rest of the Atlantic Wall, averaging about 6.4 guns per 10km compared to 2.6 guns elsewhere.

Kriegsmarine coastal artillery

The 37 naval gun batteries operational in 1944 were divided under two naval commands, the Seekommandant Languedoc for the area to the west of the Rhône river estuary and Seekommandant der französiche Riviera on the French Riviera coast to the east. These batteries were heavily dependent on French artillery equipment, with French guns representing over 70 percent of the guns (106 of 149), and the remainder including 40 German guns and three Soviet guns. The single most common gun type was the 138mm KM 1910 (f), the German designation for the 138mm Mle 1910 naval gun. The Germans gave war-booty weapons their own designations, often based on the original designation but with a suffix to identify the origins: (f) French, (r) Soviet, (i) Italian, etc.

A variety of French 75mm guns were in use. Of these, the 75mm Mle 1897 was one of the more common types, but it does not appear in the charts below since it was seldom the primary battery weapon. Instead, it was used

for secondary roles, most often for firing illumination rounds for larger guns. Often, it was deployed on a special naval pedestal mount, not on its army wheeled carriage.

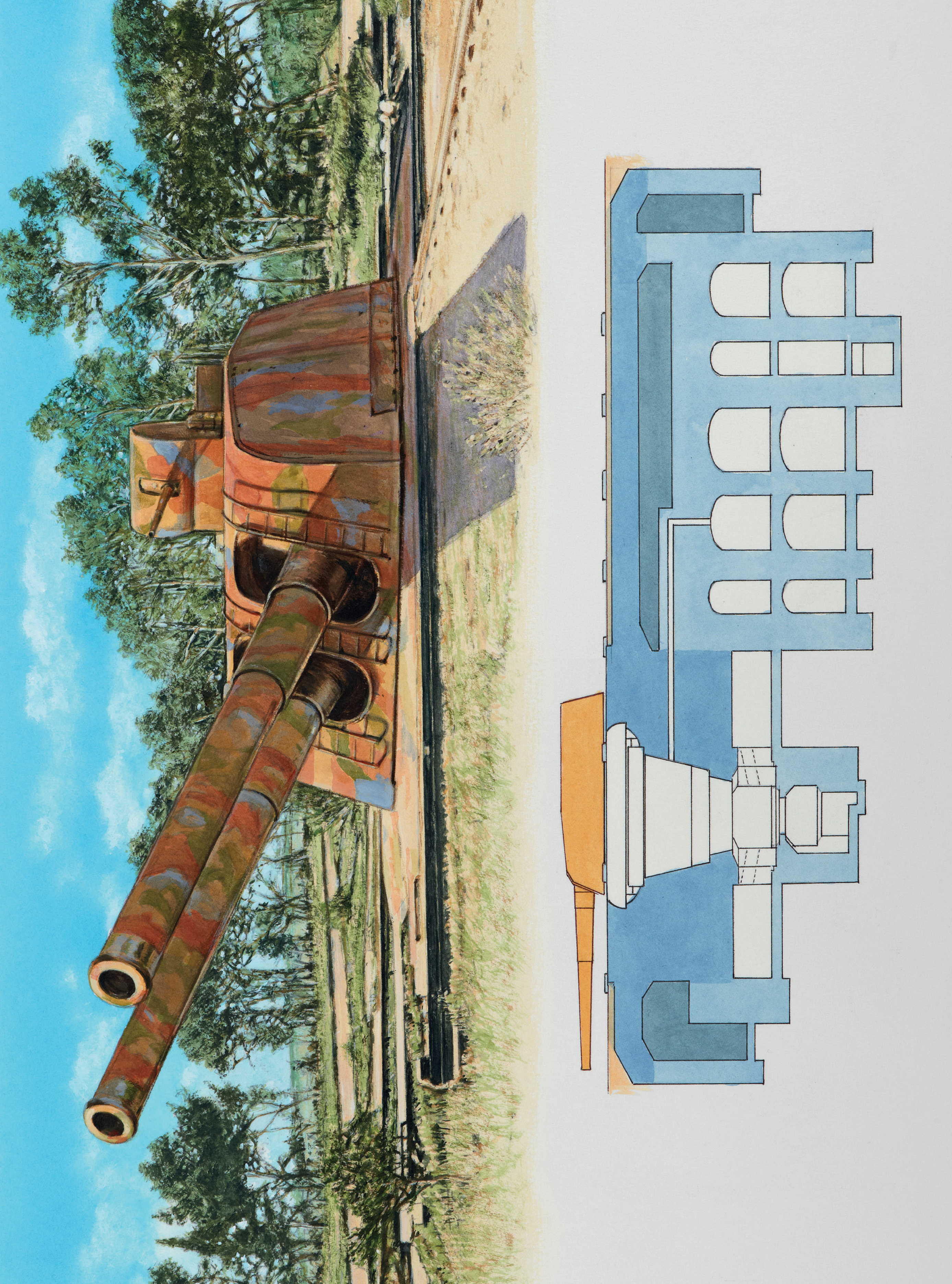
Without a doubt the most impressive gun batteries on the Südwall were the two turreted guns of Batterie Cépet, located on the highlands of Cap Cépet, overlooking Toulon harbor. These were installed on the peninsula as the result of a 1920 French coastal defense program that intended to deploy five turrets armed with twin 340mm Mle 1912 in the area around Toulon-Hyères, including Cépet, Sicié, Giens, Porquerolles, and Bénat, as well as additional guns to defend the naval base at Bizerte in Tunisia. These weapons came from the five cruisers of the Normandie class ordered in 1913–14. The warship construction program had been curtailed by the outbreak of the Great War, after some of their armament had been completed. In the event, the 1920 construction plan was severely curtailed by French budget problems, and only two twin turrets were finally built in metropolitan France, both on Cap Cépet. Two more of these turrets were installed at the Batterie d'El-Meline near Bizerte.

The two Cap Cépet turrets were the visible part of a much larger underground fortification with large galleries for crew and ammunition. The western battery was designated as Ouvrage C and was intended to cover the Cavalas bay south of Cap Cépet. The eastern battery, Ouvrage F, covered the area to the southeast of the peninsula. A fire control post, Ouvrage E, and a command post, Ouvrage D, were built on the tip of Cap Cépet. A construction contract for the structures was awarded in 1928, and the turrets began to be fitted into the battery position in 1930. The two batteries were supported by a variety of fortified positions including a searchlight unit and several antiaircraft positions. The first test firings from Ouvrage C began on December 15, 1931, and after changes and improvements were made, the batteries were declared complete in September 1933. They saw no combat in the 1940 campaign.

Under the terms of the 1940 armistice with Italy, the batteries were supposed to be demilitarized, but the British attack on the French fleet at Mers-el-Kébir on July 3, 1940 prompted the Germans to reconsider their plans regarding the defense of Toulon harbor. Since the French Navy now had an incentive to defend itself against its former ally, Berlin began to pressure Rome against demilitarization of the French naval defenses. Instead of being disarmed, the batteries remained in service with the navy of Vichy France, though at a reduced strength.



A view inside one of the M272 casemates at the Rade d'Hyères battery showing the breech area of the 150mm Tbts.KC/36, a standard type of Kriegsmarine destroyer gun that was widely used in Atlantic Wall and Südwall defenses.





This is an M262a *Leitstand* that served as the fi e control station for the Stützpunkt Bor 003 at Rade d'Hyères of the Kriegsmarine 3. Batterie of MAA 627. These bunkers contained rangefinders o locate and track enemy warships, plotting tables to prepare fi ing data, and communication equipment to pass the information to the gun batteries.

On November 27, 1942, German forces arrived in Toulon to seize Vichy French positions. Cap Cépet's French commander ordered both batteries sabotaged. Detonations in Ouvrage F damaged the rifling of the gun tubes, but the charges placed in the breech of the guns of Ouvrage C caused only minor damage. Ouvrage C was put back into action by December 15, 1942. Ouvrage F required the replacement of its barrels. The Cap Cépet batteries fell under the control of the Italian armed forces following the overthrow of the Vichy French government. The process of repairing Ouvrage F was delayed by Italian inaction and French stalling during this interregnum.

B TURM FRIEDRICH, BATTERIE CAP CEPET, ST MANDRIER PENINSULA 1944

Design of the Cap Cépet batteries can be traced back to a 1913 program to deploy two such turrets to defend the naval base at Bizerte in Tunisia. The 340mm guns came from the fi e cruisers of the Normandie class ordered in 1913–14 but curtailed by the outbreak of the Great War. They were mounted in Schneider turrets, designated as "Tourelle C modèle 24 de 340", that weighed some 602 tonnes. Frontal armor was 270mm and side armor was 140mm. Although there were plans to deploy these at six different locations, in the event only four were completed, two on the St Mandrier peninsula covering Toulon harbor and two at the Batterie d'El-Meline near Bizerte.

The western Cap Cépet battery was designated as Ouvrage C and was intended to cover the Cavalas bay south of Cap Cépet. The eastern battery, Ouvrage F, covered the area to the southeast of the peninsula. A fi e control post, Ouvrage E, and a command post, Ouvrage D, were built on the tip of Cap Cépet. A construction contract for the structures was awarded in 1928, and the turrets began to be fit ed into the battery position in 1930. Each battery had a crew of 218 officers and men. The two batteries were supported by a variety of fortified positions including a searchlight unit and several antiaircraft positions. Each turret had an additional 100mm Mle 1897 mounted in a subsidiary turret on top for training to reduce the wear on the main gun tubes. The first est fi ings from Ouvrage C began on December 15, 1931, and after changes and improvements were made, the batteries were declared complete in September 1933. They saw no use in the 1940 campaign. In 1944, the Cap Cépet batteries were operated by the 4.Batterie, Marine-Artillerie-Abteilung 682, commanded by Kapitänleutnant Ludwig Rubenbauer. The Germans renamed the two turrets as Turm Cäsar and Turm Friedrich.

Italian control lasted less than a year, and, following the Italian armistice and Operation *Achse* in September 1943, command of the Toulon defenses was taken over by the Kriegsmarine. The Kriegsmarine attempted to speed up the repairs on Ouvrage F by using gun tubes from the cruiser *Provence*, but foot dragging by French industrial firms and sabotage by the French repair teams left Ouvrage F with only a single functional gun tube at the time of the 1944 fighting.

The Cap Cépet batteries were operated by 4. Batterie, Marine-Artillerie-Abteilung 682, commanded by Kapitänleutnant Ludwig Rubenbauer. The Germans renamed the two turrets as Turm Cäsar and Turm Friedrich. The combat operations of the batteries on Cap Cépet are detailed in the following section.

Another large, turreted coastal battery was created by the Kriegsmarine to defend the approaches to Marseilles based on a design underway to defend the Gironde river estuary. The Batterie Ratonneau was constructed on old French forts from the 1886–89 program. The plan was to create four new turrets armed with four 24cm KM 02-06 (f) French naval guns that had originally armed the old battleships *Danton* and *Mirabeau*. The new turrets were constructed from armor plate salvaged from the old warship Condorcet that was being dismantled in Toulon harbor. The guns were mounted in massive S542 concrete gun pits with an associated underground ammunition bunker, built to the heavy Baustärke A standards. Although work on the S542 bunkers was largely complete by the summer of 1944, the first gun was not mounted until July 1944, and the plates of the armored turret began to be installed in August 1944, shortly before the Allied invasion. None of the turrets were completed prior to Operation *Dragoon* and the battery was not operational in time for the battle for Marseilles.

The French Navy had deployed a number of heavy turreted guns that were reinforced and modernized by the Kriegsmarine. The 164mm KM 93-96 (f) was another example of an old warship gun that was reconfigured for coastal

The most powerful defenses on the Südwall were the concentration of guns on the St Mandrier peninsula shielding Toulon. This is Türm Friedrich, one of two turreted 340mm guns at Cap Cépet. Due to French sabotage, only the right gun in the turret was functional at the time of the August 1944 gun duels with the Allied flee .



defense following the retirement of the original warship; the original French designation was Canon de 164mm Mle 1883-96. These guns armed the French Navy's Batterie de La Croix des Signaux covering Toulon's inner harbor. These weapons were typically mounted on the Affût C Mle. 23, which consisted of a universal pedestal mount and a standardized armored turret. Four more of these guns were deployed at the Batterie Giens covering the Toulon harbor. This old French fort had been completed earlier in the century and originally armed with a pair of 240mm Mle 1876 guns. When the battery was taken over from the Italians in the autumn of 1943 it was non-functional. The Kriegsmarine located four of the 164mm KM 93-96 (f) guns in the Toulon arsenal and deployed two of them on the existing French fortified gun pits and two others further east. The guns were first test-fired in December 1943, and the battery was fully operational by February 1944 with MAA 627. Two new batteries with this gun type entered construction in late 1943. The Kriegsmarine began work on Batterie Six-Fours in the autumn of 1943 over concerns that the neighboring Batterie La Cride was not sufficient to cover the western approaches to Toulon. Unlike the previous batteries which mounted the guns in open kettle positions, the Six-Fours battery used fully enclosed M272 gun casemates. After completing the bunker construction in July 1944, the Kriegsmarine decided to dismount three of the guns of the Giens battery to



Some of the large naval gun batteries had supplementary weapons such as this 75mm Mle 1897 on a Creusot Mle 1916 pedestal mount in a reinforced gun pit of the Batterie de la Croix des Signaux of 3. Batterie, MAA 682 on the St Mandrier peninsula overlooking Toulon harbor. Two 75mm guns were used to provide illumination fi e for the main 164mm guns.



Batterie 2 "Albatross", Marine-Flak-Abteilung 819 at La Renardière on the St Mandrier peninsula overlooking Toulon was substantially modernized in 1944 with four turreted 105mm SKC/32 Flak guns on FL316 bunkers. The battery's *Kommandogerät* 41L fi e direction station was mounted in a modified FL184 bunker and it is evident behind the turret in the foreground.

re-equip the new Six-Fours site. Although the guns were transferred to the site, they were not ready for action at the time of the battle for Toulon. A similar battery was also under construction near Cap Dramont in the Allied landings sector near St Raphaël. In this case, two of the four guns of 5./MAA 627 had been installed in their M272 casemates at the time of the landings, but the battery was not ready in time for the fighting.

The single most common French naval gun used on the Südwall was the 138mm KM 1910 (f) that had originally armed the dreadnoughts of the Courbet and Bretagne classes. This was usually deployed in a similar fashion to the 164mm gun, in kettle gun pits on a pedestal mount with an armored turret. Some of the five gun batteries equipped with this weapon were

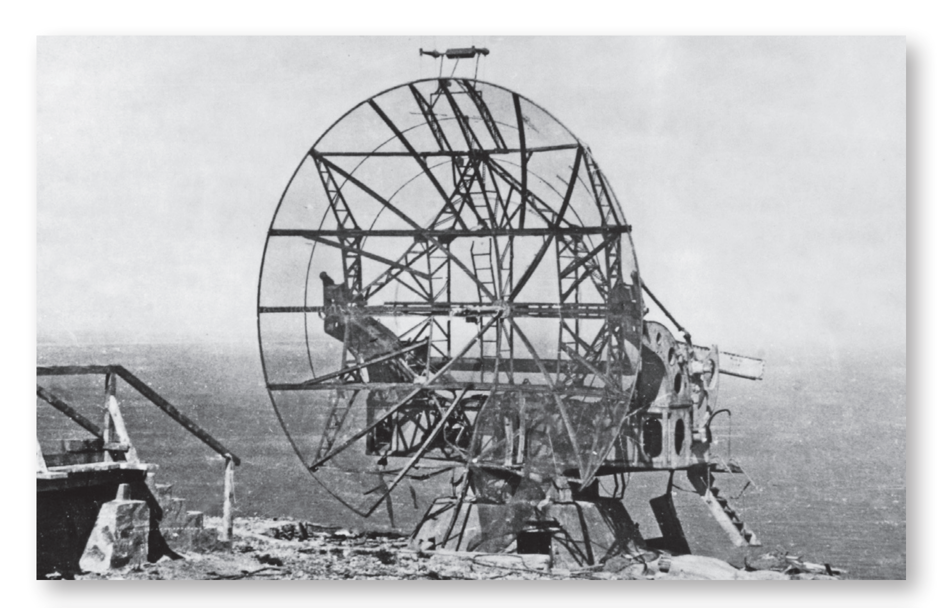
An interesting view from overhead of Batterie 2 "Albatross" of MFA 819 at La Renardière with the *Kommandogerät* 41L fi e direction station and two turreted 105mm SKC/32 Flak guns on FL316 bunkers to either side. The gun turret to the lower right is the same turret as seen in the foreground of the other photo of the battery here.

constructed by the French Navy in the interwar years while others were built by the Kriegsmarine using surplus guns.

Although French guns were the predominant type in the Kreigsmarine coastal batteries, a number of common German naval guns were present. These were predominantly destroyer guns (*Torpedobootskanone*) and U-boat deck guns (*Unterseebootkanone*). The destroyer guns were usually deployed with their usual gun shield; U-boat guns were deployed on the normal pedestal mounts.

Kriegsmarine coastal artillery deployments on the Südwall in 1944	
Seekommandant Languedoc	
1./MAA 615 Sémaphore	3 x 150mm SKL/40
2./MAA 615 Mailly	4 x 75mm Flak M.33 (f)
3./MAA 615 Mauresque	4 x 90mm Flak M.32 (f)
4./MAA 615 Cap Gros	4 x 127mm SKC/34
5./MAA 615 Fort Carré	4 x 105mm Ubts. u.Tbts.KL/45
1./MAA 610 Cabanes	4 x 150mm SKL/40
2./MAA 610 Innenmole	4 x 150mm Tbts.KC/36
2./MAA 610 Aussenmole	4 x 75mm KM 1897 (f)
3./MAA 610 Fort St-Pierre	4 x 90mm Flak M.39 (f)
E. Batterie Gneisenau	4 x 150mm SKL/45
1./MAA 625 Espiguette	4 x 105mm SKC/32
2./MAA 625 Orgon	6 x 155mm K416 (f)
3./MAA 625 Vauban	4 x 75mm KM 1908 (f)
4./MAA 625 Espanet	6 x 138mm KM 1910 (f)
5./MAA 625 Cavallas	5 x 210mm K39
6./MAA 625 Couronne	4 x 138mm KM 1910 (f)
Seekommandant der französiche Riviera	
1./MAA 611 Niolon-Bas	4 x 120mm KM 1878 (f)
2./MAA 611 Corbière	3 x 75mm KM 1908 (f)
3./MAA 611 Pharo	4 x 65mm M02 (f)
4./MAA 611 Château d'If	3 x 75mm KM 1908 (f)
6./MAA 611 Napolean	4 x 138mm KM 1910 (f)
7./MAA 611 Brégantine	6 x 155mm K416 (f)
8./MAA 611 Caveux	4 x 138mm KM 1910 (f)
9./MAA 611 Ratonneau	4 x 240mm KM 02-06 (f)
10./MAA611 Beaumette	3 x 130mm C 1940 in MPL (r)
1./MAA 682 La Cride	4 x 138mm KM 1910 (f)
2./MAA 682 Six-Fours	3 x 164mm KM 93-96 (f)
3./MAA 682 Saint-Elme	3 x 138mm KM 1910 (f)
4./MAA 682 Cépet	4 x 340mm M 1912 (f)
5./MAA 682 Croix des Signaux	4 x 164mm KM 93-96 (f)
6./MAA 682 Croupe Lamalgue	4 x 75mm KM 1908 (f)
7./MAA 682 Sainte-Marguerite	4 x 105mm KM 1897 (f)
1./MAA 627 Vogelberg	4 x 138mm KM 1910 (f)
2./MAA 627 La Badine	4 x 120mm KM 1878 (f)
3./MAA 627 Hyères	4 x 150mm Tbts.KC/36
4./MAA 627 Cap Bénat	4 x 105mm 105mm Ubts. u.Tbts.KL/45
5./MAA 627 Drammont	4 x 164mm KM 93-96 (f)

The Würzburg See Riese FuMO 214 radar was the Kriegsmarine version of the type known to the Allies as the "Giant Wurzburg." It was deployed both for surface search and for artillery fi e control. This particular example was deployed as part of defense nest Wn 022 at Fort Béar located near the Pyrenees on France's western Mediterranean coast between Port-Vendres and the Bay of Paulilles.



The Kriegsmarine Funkmesskompanie 51 established a radar station on the St Mandrier peninsula in the 19th-century Fort du Gros Bau overlooking the approaches to Toulon harbor. This is a Fu.MG 451 Freya Flamme radar, located in the Wn Tor 065b–069b strongpoint there. This was part of the early warning network on the Mediterranean coast and had the capability to "ping" the identific tion-friend-or-foe systems on Allied aircraft for long-range detection of the direction of forthcoming attacks.



The largest fortified stru ture built by the Kriegsmarine on the French Mediterranean coast was the massive U-boat bunker in Marseille, codenamed Martha. Construction started in May 1943 and it was designed to accommodate up to 20 submarines. It was never fully completed, in no small measure due to repeated Allied bombing raids.

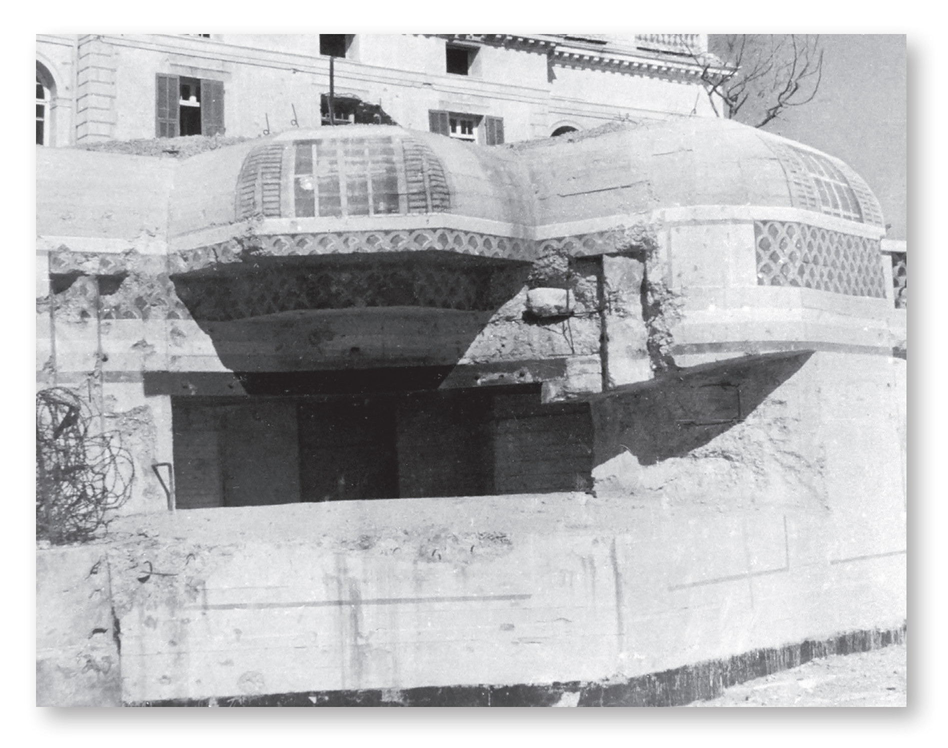
Kreigsmarine bunkers

In contrast to the Atlantic coast, the Kreigsmarine did not have a large number of major construction programs on the Mediterranean since it inherited so many French navy structures at Marseille and Toulon. The largest and most significant project was the construction of a massive U-boat bunker in Marseille, codenamed Martha. Construction began in May 1943 near the Mirabeau basin. The original scheme was to accommodate 20 U-boats though the objective was later increased. The roof was 5.5m thick, enough to protect it against standard aircraft bombs when complete. The Allies learned of the program from French intelligence and on December 2, 1943, the 15th Air Force staged a raid using 129 B-17 bombers. The air raids severely damaged the structure, complicating further work on the site; the bunker was never completed. At the time of the *Dragoon* landings, the structure was 208m long and 44m wide.

Army coast artillery

Kriegsmarine coastal artillery batteries were clustered around the major ports. The army (Heer) deployed its coastal artillery along the coastlines in between. This was a common practice on the Atlantic Wall, since a single coastal gun battery could provide a minimal level of defense about 10km to either side of the battery.

From November 1942 to September 1943, the Heer coastal artillery was initially commanded by a single Arko (Artillerie-Kommandeur), Generalmajor Walter Vogel, under Army Group Felber. The coastal artillery included only a single regiment, HKAR 920 along with a training battalion, Heeresartillerie-Lehr-Abteilung 101. HKAR 920 was unusually large, with 20 batteries at its peak. After the Italian armistice, the coastal artillery had to be reorganized. In December 1943, HKAR 920 was split in two with HKAR 1290 in control of about half the batteries on the Languedoc coast under Arko 2. A new Arko, Artillerie-Kommandeur 219, took control of the batteries on the French Riviera including HKAR 1291 which took over the former HKAR 920 batteries in this sector, along with numerous Italian batteries that had been taken over by German troops.



A good example of an H671a gun casemate, the No. 3 gun position of 3./HKAA 1291 of the Batterie de la Corne d'Or in Cannes with *trompe-l'oeil* paintings to make it appear as a coastal villa.

The army operated a very motley selection of weapons for coastal defense. By 1944, it had 262 guns, mostly war-booty guns of Italian and French origin. There were 17 types in army service including 120 Italian, 93 French, 24 Soviet, 10 German, and 11 from other sources. By far the most common weapon was the 149mm s.FH404 (i) howitzer, the German designation for the Italian Obice da 149/19, which accounted for about a third of the total force. The next most common type was the 105mm K331 (f), the German designation for the French Schneider Canon de 105 Mle 1913. Through the end of 1943, most of the coastal batteries used reinforced field positions. These were typically a simple circular dugout with the outer walls lined with wattle. The lucky few used concrete kettle positions.

The December 1943 program to build casemates for the army coastal batteries was not as complete as in other sectors of the Atlantic Wall due to

C FIELD ARTILLERY ENTRENCHMENT, ABTEILUNG CONIGLIO, FRÉJUS, AUGUST 1944

The port of Fréjus has offered a natural landing site since ancient times, and was the site of Julius Caesar's landing in Gaul. The Italian 4a Armata had recognized the significan e of this location when they occupied the area in 1940–43. They positioned six batteries with two-dozen Ansaldo Obice 149/19 149mm field h witzers in the heights around the port. This particular type of field h witzer was the most common type on the French Riviera coast. It was a durable and modern piece, and remained in production after the German occupation of northern Italy in the autumn of 1943. After the 1943 armistice, these batteries remained in service with mixed volunteer Italian/German crews as "Abteilung Coniglio," named after their commander. By 1944, they were redesignated and the three batteries west of Fréjus became I./671 Heeres Artillerie Abteilung (mot.) while the three emplaced batteries northeast of Fréjus became the I./HAA 1192.

There was never enough concrete available to provide permanent gun pits in this sector, so more traditional entrenchments were used. These batteries were deployed in simple field dugouts with the side walls lined with a wattle fence made from stakes driven into the ground and the area between filled with i terleaved branches. In some cases, the gun pits were camouflaged using verhead camouflage net , but in this case, no net is fit ed.

During the preparatory air campaign for Operation *Dragoon*, these gun sites were attacked by medium bombers in the days before the landing, and by naval gunfi e on the morning of August 15, 1944.



the shortage of time and resources. In general, the batteries received gun casemates and fire control bunkers, but the supporting structures such as ammunition bunkers and personnel shelters were not complete at the time of Operation *Dragoon* and so relied on earthen field emplacements. Generalmajor Vogel was aware of the shortcomings of these guns for casemate mounting and in 1943 requested that swivel mounts be dispatched so that the guns could be more effectively used in the casemates. This began in the spring of 1944 with the arrival of 60 swivel mounts for 15 batteries, primarily for the 105mm K331 (f).

The army gun casemates differed from the navy casemates due to a different philosophy about the weapons. Army casemates usually had a large garage door at the rear. In theory, this permitted the field gun to be pulled out of the casemate and dispatched to another sector if needed. Since the Kriegsmarine used naval guns that were bolted to the foundation on pedestal mounts, there was no need for a garage door in their casemates.

Besides the standard coastal artillery batteries, Heeresgruppe G also had an army railroad artillery unit, Eisenbahn-Artillerie-Abteilung 640, headquartered at Brignol to the north of Marseille, guarding the mouth of the Rhône River. It consisted of three batteries, E.692 with three French 274mm railroad guns, E.698 with two German 380mm Siegfried guns, and E.749 with two 280mm K5 guns. Two of these batteries, E.692 in Chateauneuf



An 88mm PaK 43/41 antitank gun in an open position on Fort de Malbousquet overlooking Toulon's inner harbor (Petite Rade), captured by the French 9e DIC during the fig ting on August 25, 1944. This gun was probably from Panzerjager-Batallion 1039, a specialized antitank unit formed by AOK 19 for use along the Südwall. These powerful antitank guns were too cumbersome for field use when introduced in 1943, and many were retired for use on the Atlantic Wall and Südwall.

and E.698 in Marignane, were deployed with turntables that provided them with full 360-degree traverse. The Kriegsmarine also had a single railway gun on the Südwall, EB Gneisenau, but it was withdrawn from the Mediterranean coast in July 1944 prior to Operation *Dragoon*.

There was considerable turmoil in the army artillery deployments after the D-Day landings in Normandy on June 6, 1944. Due to heavy attrition of infantry divisions in Normandy, Heeresgruppe G gradually lost some of its infantry divisions. This led to a continual reconfiguration of coastal defense zones, and in some cases, the movement of gun battery positions to cover resulting gaps. In addition, several gun batteries were taken from the Südwall and sent to Normandy to serve as field artillery.

The most powerful weapons stationed on the Südwall were a pair of 380mm Siegfried railway guns of Eisenbahn-Batterie 698 stationed near Marignane. This gun was named Gneisenau, the other Scharnhorst. These were based on surplus naval guns from the Bismarck class of battleships and four were in service in 1944.



This 280mm K5 rail-gun was one of two of this type from Eisenbahn-Batterie 749 that arrived in 1944. After its capture in the Rhône Valley in late August 1944, this gun was dismantled as seen here and its carriage was used by the 343rd Engineer Regiment to repair a bomb-damaged section of the Pont de l'Arc bridge near Aix.

Army coastal artillery deployments on the Südwall in 1944		
Artillerie-Kommandeur 2		
1./HKAR 1290	Pla d'en Guirand	4 x 105mm K332 (f)
2./HKAR 1290	Romandis	4 x 105mm K331 (f)
3./HKAR 1290	Gruissan	4 x 105mm K331 (f)
4./HKAR 1290	St Pierre	4 x 122mm K390 (r)
5./HKAR 1290	Le Mazet	4 x 122mm K390 (r)
6./HKAR 1290	Port Louis	4 x 105mm K331 (f)
7./HKAR 1290	L'Aguette	4 x 105mm K331 (f)
9./HKAR 1290	Le Laveron	4 x 105mm K331 (f)
11./HKAR 1290	St Pierre	3 x 170mm K18
16./HKAR 1290	Sète Corniche	4 x 122mm K390 (r)
20./HKAR 1290	Valras	4 x K331 (f)
1./HKALA 101	Rochelongue	4 x 105mm K331 (f)
2./HKALA 101	Cap d'Agde	4 x 105mm K35 (t)
3./HKALA 101	Tamarissière	4 x 105mm K331 (f)
4./HKALA 101	Castelfort	4 x 170mm K18 + 2 x 75mm FK 235 (b)
5./HKALA 101	Tamarissière II	6 x 84mm FK271 (e) + 3 x 75mm FK 235 (b)
Artillerie-Kommandeur 219		
HAA 1190	Toulon	12 x 100mm GebH16 M14 (i)
HAA 1191	Toulon	12 x 105mm K338 (i)
HAA 1192*		12 x 149mm sFH404 (i)
HAA 1193*		12 x 149mm s.FH404 (i)
HAA 1194*		12 x 149mm s.FH404 (i)
HAA 1195	St Raphaël	12 x 155mm s.FH414 (f)
HAA 1196**		12 x 152mm s.FH412 (i)
HAA 1197	Toulon	12 x 149mm s.FH404 (i)
HAA 1198*		12 x 149mm s.FH404 (i)
AA 671	St Aygulf	12 x 149mm s.FH404 (i)
AA Coniglio	St Raphaël	12 x 149mm s.FH404 (i)
* Withdrawn to Normandy prior to Operation *Dragoon* ** Withdrawn to Italy		
1./HKAR 1291	Le Redonne	4 x 220mm K532 (f)
2./HKAR 1291	Le Rove	4 x 122mm K390 (r)
3./HKAR 1291	Estaque-Fenouille	4 x 105mm K331 (f)
4./HKAR 1291	Montredon	4 x 105mm K331 (f)
5./HKAR 1291	Escalette	4 x 122mm K390 (r)
6./HKAR 1291	Île Verte	4 x 122mm K390 (r)
7./HKAR 1291	Cap St Louis	4 x 105mm K331 (f)
8./HKAR 1291	Pin du Midi	3 x 220mm K532 (f)
9./HKAR 1291	Le Ciotat	3 x 170mm K18
10./HKAR 1291	St Tropez	6 x 155mm K416 (f)
11./HKAR 1291	St Aygulf	4 x 75mm FK231-C/97 (f)
12./HKAR 1291	Théoule	4 x 75mm FK231-C/97 (f)
13./HKAR 1291	Cannes-la Maure	4 x 75mm C/08 (f)
14./HKAR 1291	Cap d'Ail	4 x 105mm le.GH322 (f)

Army coastal defenses



A *Panzerdrehturm* mounted on a Vf.25 Ringstand used as part of the defense nest WN Mal 042 in La Ciotat south of Marseille. This one used an APX-4 turret from the Char B1 bis battle tank. The commander's cupola has been knocked off du ing the fig ting there in late August 1944.

Due to limited time and resources, the Südwall fortification effort focused on coastal artillery positions. Efforts to construct fortified infantry positions for coastal defenses took a back seat compared to other areas of the Atlantic Wall. The most common form of fortified infantry defense position was the *Ringstand*, more popularly called a Tobruk. The Tobruk name stemmed from their origins in the Western Desert campaign where the Italian army created quick fortified lines using sections of concrete water pipes dug in vertically into the ground as a reinforced machine-gun position. In the German case, the Tobruk evolved into a family of small defensive positions. These varied in shape and function. Their common feature was a circular opening for a weapon, typically a machine gun or mortar. Most Tobruk designs also incorporated a small room below that served the dual purpose of sheltering the crew during artillery bombardment as well as serving as an ammunition reserve. They were not intended for permanent crew lodging. The Tobruk was classified as a "reinforced field position."

It is worth noting that during the short interlude of Italian control of the French Riviera coast in 1943, Italian construction troops built a modest number of reinforced strongpoints. The most important difference between Italian and German bunker design was the lack of steel reinforcement, which made the bunkers far more vulnerable to artillery fire. The most common Italian bunkers were the dome-shaped "Caposaldo" types. Italian bunkers were generally intended to serve as machine-gun positions, and only offered defense against small arms and other infantry weapons such as light mortars.



About 30 of the *Panzerdrehtürm* 38(t) fortific tions were deployed long the Südwall on the French Mediterranean coast including this one on the Promenade des Anglais in Nice.

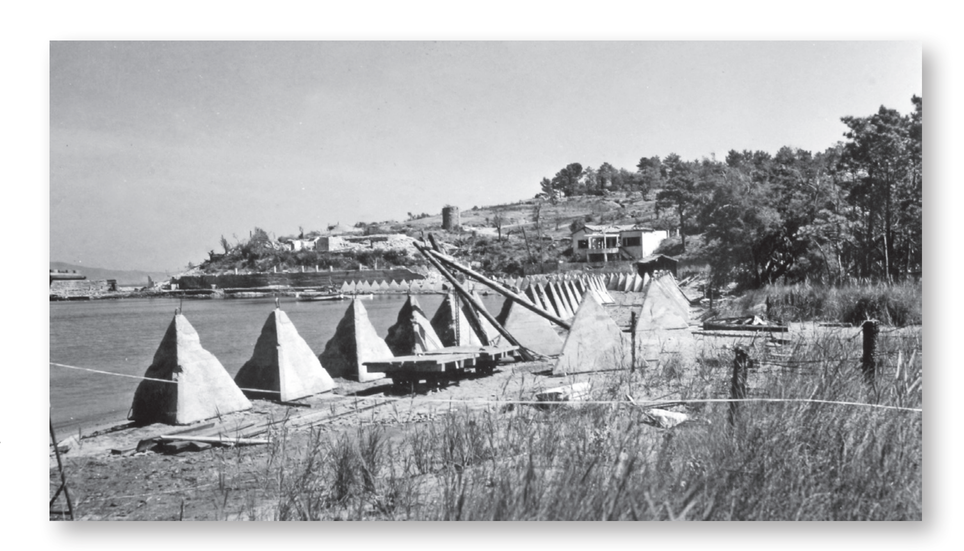
Infantry coastal defenses were often improvised due to a lack of resources. This war-booty Soviet 76.2mm Mod. 1927 regimental gun was part of the defenses of the 17. Kompanie, Grenadier-Regiment 917 and mounted on the battlements of Fort de l'Eminence on Ĭle de Port-Cros, part of the Îles d'Hyères chain to the east of Toulon.



An offshoot of the Tobruk was the *Panzerdrehturm*, consisting of an obsolete tank turret mounted on various types of Ringstand. These were widely used around the Mediterranean ports and by the beginning of 1944 in the AOK 19 sector there were 222 of these including 117 PzKpfw II, 57 PzKpfw 38(t), 28 Somua S-35, and 20 French APX-R 37mm turrets.

The defense zones were based around platoon-size defense nests (*Widerstandnest*) which in turn formed a company-sized strongpoint (*Stützpunkt*). For example, Toulon had 24 strongpoints, manned by 1,590 troops and armed with 141 machine guns, 11 mortars, 23 Flak guns, and 22 field guns.

In contrast to Normandy, the Mediterranean coastline was erratically protected by shore obstacles. This was in part due to a difference in viewpoint between commanders. The commander of Heeresgruppe B in northern France, Erwin Rommel, was particularly enamored of the creation of a "devil's garden" of obstacles and mines in front of the beach defenses as a way to create a kill-zone that would slow an enemy advance and make them more vulnerable to German defensive firepower. Heeresgruppe G on the Mediterranean showed far less enthusiasm for such defenses. This was in part due to a lack of resources, but also due to the fact that the Mediterranean had less dramatic tidal differences that reduced the value of concrete obstacles for the anti-craft role. One type of obstacle that was popular on the Mediterranean



There was less enthusiasm for concrete obstacles on the Südwall than on the northern beaches of the Atlantic Wall, due in part to tidal differences. These examples seen near the *Dragoon* beaches were a local design.

coast was the antitank wall, intended to keep tanks trapped on the beach. About 30km of these walls were built on the Mediterranean at key locations.

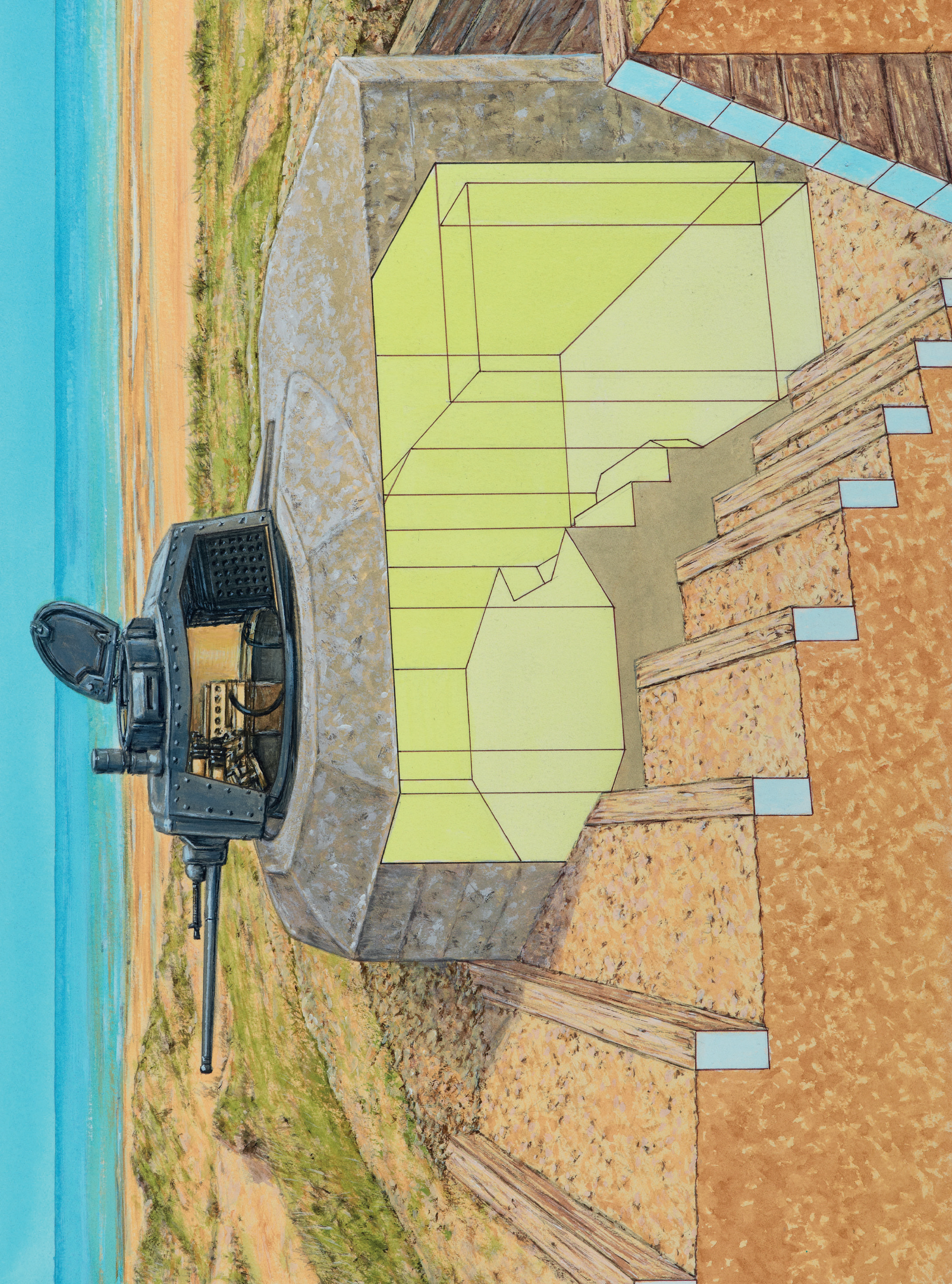
The obstacle fields were the responsibility of the three corps-level engineer regiments, Festung-Pionier-Stab 24, 3, and 14. These units did not actually construct the obstacles, but rather provided the experienced engineer staff to direct Organization Todt or the local army units to construct the obstacle belts. Of 310km of coast that was supposed to be defended by obstacles, only 87km was completed by August 1944. It is worth noting that the Var/Riviera coastline where the *Dragoon* landings took place had the weakest coastal obstruction belts. Mines were not widely deployed on the beaches but there were significant minefields further inland with some 1,502,000 in place by August 1944.

Beach obstacle density on AOK 19 coastline				**Total**
Fest.Pi.Stab Sector	24	3	14	
Corps	4. LFK	85. AK	62. AK	
Planned length (km)	86.0	138.8	84.1	308.9
Completed	19.6	29.3	37.9	86.8
In construction (7/44)	14.8	19.5	0	34.3
Concrete stake	0	70	0	70
Wooden stakes	6,973	7,077	6,748	20,798
Mines	217	831	710	1,758
Concrete tetrahedrons	1,614	3,251	2,793	7,658
Other	40	231	0	271
Obstacles per km	451	391	270	352

Besides the use of concrete and steel obstacles, the program also included anti-paratroop defenses. These consisted of obstacles placed in open areas judged to be particularly likely for glider landings. The most important effort was in the La Crau area near Marseille which Heeresgruppe G thought



In anticipation of the use of Allied air landings forces, many areas behind the coast were planted with high posts to impede glider landings. These 7m-high poles were erected in the area behind the beaches at Ste Maxime and are seen on August 16 after the area was occupied by a French medical unit.





One of the more common forms of antitank defenses on the Südwall beaches were antitank walls. This example on the invasion beaches around St Raphaël is about to be breached by a team from the 540th Engineers AFHQ who have placed captured German antitank mines up against the wall to enhance the blast.

particularly vulnerable to air landings. In contrast to Normandy, where wooden stakes were the normal form of anti-glider obstacle, the shortage of timber on the Mediterranean coast led to the widespread use of large rocks. Another form of anti-landing defense inland from the coast was the flooding of likely paratroop landing sites. This was usually accomplished by placing dams along local rivers and diverting their flow. The most significant inundation programs on the Südwall were around Arles and in the area south and northwest of Fos.

Aside from tactical defenses, the fortification engineers also created a number of special fortified headquarters for the OB West and AOK 19 staffs. This included an underground cavern for the AOK 19 command center at Villeneuve/Avignon, along with a complex of large bunkers for the OB West staff assigned as liaison to this headquarters. A number of corps headquarters were also reinforced, usually by tunneling into local cliffs rather than creating bunkers.

D *PANZERDREHTÜRM* 38(T) NORMALSERIE, BAUFORM NR. 241, SÜDWALL, 1944

The decision to prematurely terminate the production of the PzKpfw 38(t) Ausf. G tank in 1942 due to its thin armor and weak fi epower left the manufacturing plant with about 200 turrets in various states of completion. With the Atlantic Wall fortific tion program underway, 225 turrets were transferred from the factory to the fortific tion engineers in 1942–43 for incorporation into the coastal defenses. At least 57 of these were deployed on the Südwall, making it the second most common type after the PzKpfw II. These were generally mounted on the Bauform Nr. 241, a modified ersion of the standard Ringstand, the Bauform Nr. 67. The comparable version for the PzKpfw II was the Bauform Nr. 237. These were built to B1 standards with the walls a meter thick. Construction required 15 cubic meters of concrete and 1 tonne of steel reinforcing rod and other steel parts. Since the B1 standard was not suffici t to protect against naval gunfi e, the Ringstand was supposed to be buried up to its roof. The design had a concrete combing around the base of the turret to reduce its vulnerability to bullet-splash and small arms fi e. To adapt the turret to the Ringstand, a special steel plate was used that was bolted to the roof. Like most Tobruks, it had a small compartment at the rear that was used for ammunition stowage as well as to shelter the crew in the event of an artillery bombardment. The compartment was intended to contain up to 396 rounds of 37mm ammunition and 45,000 machine-gun rounds. Access was though a side door, usually located on the left side of the Ringstand. There was usually a trench leading to this door.



US troops inspect a "Doodlebug house" on Beach Camel Red. These improvised structures contained a Goliath remote-control demolition vehicle that was intended to attack landing craft and tanks on the beach. Over a dozen of these were discovered on the *Dragoon* landing beaches including four on Alpha Yellow and four on Camel Red. Apparently, none were used during the fig ting on the beach.

Curiously enough, in May 1944, the army engineers on the Südwall were given a new assignment. The German intelligence agency Fremde Heer West (Foreign Armies West) declared that the Allies were planning to land in Spain and invade France through the Pyrenees. As a result, a special sector group had to be formed to block the mountain passes as well as the coast. These included the standard types of defenses – infantry Tobruks, antitank ditches, and a small number of tank turrets. In the latter category, it included the only use of the expensive *Pantherturm* on the Südwall. This resembled a Panther tank turret, though it was in fact a special fortification design with thicker armor on the roof. These were primarily designed for use on the fortified lines in Italy, but a handful were deployed in the Pyrenees.

Defenses of the Ligurian Wall

In the wake of the Italian defection, the Wehrmacht took over the numerous Italian batteries along the Ligurian coast after September 1943. At first, the Italian artillery batteries were absorbed by German divisions and subordinated as auxiliary batteries to the existing divisional artillery. In 1943, the Kreigsmarine dispatched four coastal artillery battalions to take control of the major coastal defense batteries around the ports of Genoa, Livorno, and La Spezia, while the army retained control of the batteries between the ports. In general, priority for the fortification of the batteries went to the Kriegsmarine batteries and most army coastal batteries either remained in existing Italian positions, or were deployed in field positions. With the exception of railway artillery, most artillery weapons on the Ligurian Wall were war-booty Italian types.

After the occupation of northern Italy, Germany established a fascist puppet state, the RSI (Repubblica Sociale Italiana) along with new Italian armed forces, the Forze armate della RSI. It was these troops who made up the bulk of the defenders of the Ligurian Wall. The LXXV Korps (75. AK) under General der Infanterie Anton Dostler was formed in January 1944 specifically for this coastal defense mission. In its original configuration, it included three divisional defense sectors, KVA Genua (356. Infanterie-Division), KVA Spezia (Festung-Brigade 135), and KVA Livorno (162. (Turk.) Infanterie-Division). This modest force was assigned to defend some 350km of coastline, which was especially difficult in view of the motley assortment of troops at its disposal. The 356. Infanterie-Division in January 1944 was based around four Küsten Festungs Bataillone (Ital.), also known by their Italian designation of Battaglione difesa costiera. These battalions were manned by Italian troops, with German advisors and trainers. By the spring of 1944, the division was reinforced with regular German infantry battalions. The 162. Infanterie-Division was formed around Turkomen and Azeri volunteers from Red Army prisoner-of-war camps with German officers and NCOs.

The Ligurian coast, with some important exceptions, was not well suited to amphibious invasion due to the Apennine Mountains, which often reached the coast as sheer cliff faces. The exceptions to these natural barriers were the flat terrain around the naval base at La Spezia, and some of the Ligurian ports that were built where, over the ages, rivers had carved channels through the mountains and cliffs. Berlin considered the most vital sector to be the port of Genoa since the local geography provided an invader with the opportunity to pass through the Scrivia River gap in the Apennine Mountains towards vital objectives in northern Italy including Milan and the Po River valley as well as the possibility of pushing along the Arno River towards Florence.

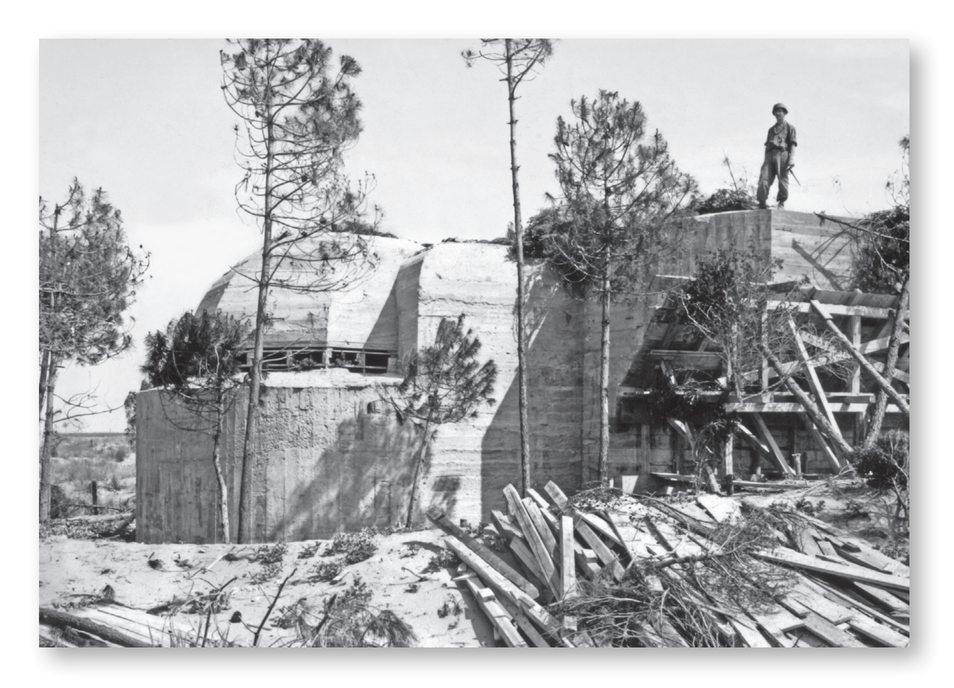
Existing Italian defenses formed the backbone of the Ligurian Wall. The most impressive defense works on the Ligurian coast were the Monte Moro batteries on the heights of the Genoa, overlooking the port. This defense work had been created in response to the French Navy sortie in June 1940 and a subsequent Royal Navy attack of February 9, 1941 that exposed the inadequacies of the Genoa defenses. Curiously enough, these new batteries were erected by the Italian Army rather than by the navy since Genoa was not classified as a maritime defense base. Four batteries were created, two armed with the 152/45 guns and two turreted batteries with the massive 381/40 battleship guns. The 381mm guns were originally intended for the Francesco Caracciolo-class battleships of 1914 that were ultimately canceled. The guns eventually were used in a variety of coastal defense turrets and railroad guns. Two twin-turrets with these guns had been assigned to the Italian Navy for La Spezia and Augusta on Sicily. In the event, they were diverted to the army as a result of the uncontested Allied naval bombardments of Genoa. Work on the 381mm turreted batteries began in 1941 and was completed in 1942. In parallel, two other batteries were constructed using the smaller 152/45 guns. The Italian naval base at La Spezia also had a substantial array of coastal guns, including eight 305/17 howitzers with the Batteria Cavour and Cascino, and five more 152mm batteries, each with four guns.

Construction of new German coastal defense batteries on the Ligurian coast was focused mainly in the Genoa sector due to German concerns over the likelihood of Allied amphibious landings there, as mentioned above. The



The coastal gun casemates on the Ligurian Wall often had elaborate *trompe-l'oeil* camouflage such as this H680 gun casemate of HKAA 956 disguised as a seaside restaurant in one of the strongpoints in Viareggio.

A nearly completed H636 *Leitstand* fi e control post for an army coastal artillery battery of HKAA 956 located near Marina di Pisa on the Ligurian Wall.



designs followed Atlantic Wall practice. However, the scale of construction was more modest than the Südwall due to its late start and the assignment of most of the Organization Todt and fortress engineer units in Italy to the construction of interior defense lines such as the Gothic Line.

Ligurian Wall coastal artillery, June 1944	
KVA Genua	
AR 356	Nine Italian batteries, one railway battery
MAA 619	Eight naval gun batteries
MAA 575	Six Flak batteries KVA Spezia
MAA 622	Ten naval gun and Flak batteries
HKAR 932	Six Italian artillery batteries, one railway battery
Fla.Rgt. 137	Five Flak batteries
KVA Livorno	
HKAR 933	Six German batteries, three Italian batteries, three railway batteries, three Flak batteries
MAA 616	Three naval gun batteries
Festung Elba	
z.b.V. Sterz	Six gun batteries
MAA 616	Seven naval gun and Flak batteries

THE LIVING SITE

The troops assigned to the Südwall, especially the coastal artillery units, tended to be older men – up to 55 years old in some units. The units were periodically "combed out" for younger and fitter personnel who were then assigned to the Russian Front. The infantry divisions had younger troops, but in the static divisions, the average troop age was often as high as 35 years old.

The Südwall differed from other sections of the Atlantic Wall since relatively few personnel shelters were built to accompany the gun casemates. As a result, the coastal batteries tended to have accommodation in neighboring towns. Those located near the major ports often used existing

French garrisons. The Wehrmacht established alert levels that governed the degree to which the batteries were manned. Usually, the troops were involved in either training or construction work, and the batteries were manned by skeleton crews who were mainly tasked with maintaining security around the sites. While most of the sites were in isolated areas or within restricted military garrisons, some areas began to see increase in activity by the French resistance in the months leading up to the *Dragoon* landings. The main threat to the neighboring Ligurian Wall in Italy was the presence of Italian partisan groups rather than regular Allied forces.

The coastal defense sites came alive in the event of threat warnings. In the case of the Südwall, German intelligence picked up the first signs of the movement of the Allied invasion fleets on August 10, 1944. Since there was no clear indication where the assault might take place, the entire coast was put at Alert Level 2 on August 12, 1944, and this was raised to Alert Level 1 on August 14, meaning that all batteries and defenses were fully manned at all times.

The unit directly in the path of Operation *Dragoon* was the 242. Infanterie-Division (Bodenständig) headquartered in Hyères. The division was assigned about 150km of coastline from Cap Dramont near St Raphaël in the east to Cap Sicié west of Toulon. The division had been formed in July 1943 mostly from depot troops and dispatched to Belgium for occupation and training duties. It almost immediately lost one of its regiments to reinforce the 709. Infanterie-Division near Cherbourg. The division was dispatched to southern France where it was fleshed out with the new Grenadier-Regiment 765. By July 1944, it was near full strength with 12,000 troops, but three of its 12 infantry battalions were replaced with Armenian or Azeri Ost battalions in April 1944. These Ost units formed the antitank and antiaircraft companies in each regiment.

The division's equipment was a hodgepodge of leftovers, with French and Italian weapons predominating; many of its Soviet, Czech, and Polish weapons came secondhand from the Italians. For example, instead of the standard German MG 34/42, the division's machine guns included at least 13 types, including Italian 6.5mm, 8mm and 13.2mm machine guns, Polish 7.62mm Maxims and Brownings, three different French machines in different calibers, and a mixture of German machine guns including World War I Maxims and some MG 34s. To make up for its excessive frontage, the division had an unusually large amount of small-caliber artillery beyond the usual divisional tables. For example, besides its usual 75mm PaK 40 antitank guns, it had 36 additional obsolete antitank guns for coastal defense which included French 25mm and 47mm, German 37mm and 75mm, Soviet 45mm, Czech 47mm and Italian 47mm guns. It also had several dozen assorted World War I French and Italian light field guns also used for coastal defense. The division's infantry mortars were mostly Italian 45mm and 81mm and French 81mm types. While this might seem to be a logistical nightmare, in fact the division was pretty much limited to whatever ammunition was on hand, and it lacked the transport for resupply once the fighting began. So, the division generally received a higher allotment of artillery and mortar ammunition than usual, on average six units of fire, compared to only two units of fire issued to units in Normandy. (A unit of fire is an amount of ammunition roughly equivalent to an average day's usage in combat; a unit of fire for a light field howitzer battery was 900 rounds.)

Artillerie-Regiment 242, the division's artillery regiment, had three field artillery battalions each equipped with different guns including I./AR 242

with Yugoslav Skoda M28 100mm field howitzers (FH317j), II./AR 242 with Italian Skoda 100/17 field howitzers (FH315i), and III./AR 242 with Czech Skoda M14/19 100mm field howitzers (FH14/19t). These guns were in prepared field positions, not casemates. In the 242. Infanterie-Division sector, there were 106 additional artillery pieces with various coastal artillery units. As befits its name, the division was almost completely static and over the course of 1944 its horses and carts were gradually stripped away. Only one company in each battalion was nominally equipped with bicycles to serve as a mobile force.

The army coastal artillery in this sector was directed by Arko 210 based in Draguignan and under the command of Col. Wolfgang Nieper. This sector included 11 coastal artillery battalions each with three batteries of four guns each, for a total of 132 guns. The weapons were the usual assortment of captured Italian and French guns, with the Italian Obice da149mm 149/19 (FH404) field howitzer being the most common type equipping seven of the battalions. The Kriesgsmarine coastal artillery regiments were concentrated around major ports of Toulon and Marseilles; in total there were five normal battalions and one light battalion. The heaviest concentration of the naval coastal batteries in the 242. Infanterie Division sector was Toulon where the eight batteries of Marine-Artillerie-Abteilung 682 were stationed, under the command of Korvettenkapitän MA Ernst Schmitz.

OPERATIONAL HISTORY

Operation *Brassard*

The Allied pursuit of retreating German and Italian forces past Rome in early June 1944 led to the first encounters with the Ligurian Wall. The southernmost emplacements around Piombino were reached by the end of June 1944 and the Allies reached Livorno (Leghorn) and Viareggio by late August 1944, overrunning most of KVA Livorno by the time the offensive halted. Few of the new Ligurian Wall defenses had been completed in this sector by this time.



An Italian Schneider/Armstrong 102/35 gun position overlooking the Bay of Portoferraio on the north coast of Elba. It was one of three guns of the former Italian Batteria E133, taken over by MAA 616 after September 1943. Prior to the evacuation of Elba, this gun was spiked with the gun-tube slid out of the carriage.



An Italian Schneider 152/45 of the Batteria Antinave 152/45 "Lodovico De Filippi" was located on the promontory over Enfola on the north coast of Elba. This battery of four guns and the neighboring battery "Gino Fara Forni" were operated by 1./MAA 616 and 4./ MAA 616 in 1944 during the fig ting for Elba.

The island of Elba was one of the most heavily defended strongpoints in this sector. The island had been the site of previous fighting when the paratroops of III./Fallschirmjager-Regiment 7 staged Operation *Goldfasan* on September 17, 1943 to take control of the island from the reservists of the Italian 215° Division. By June 1944, there were about 4,000 German and Italian troops on the island including the 6. Küst.Fest.Bat. (Ital.), also known as 6o Battaglione difesa costiera, seven coastal artillery batteries of MAA 616, and six army artillery batteries under Special Operations Command Sterz (z.b.V.Sterz). Hitler was adamant that the island be held "to the last bullet" and ordered the island reinforced after the fall of Rome on June 5. The Royal Navy had planned to take the island as early as May 1944 to prevent the Germans from using it as a base of operations against the Allied campaign on the coast of Tuscany. Operation *Brassard* was rescheduled for June 17, 1944, with the Royal Navy providing most of the landing support and the French 9e Division d'Infanterie Coloniale providing most of the troops. The landings took place largely unopposed due to the early morning fog, and fighting continued for three days until June 19, 1944, when Hitler authorized an evacuation of the island. While the action had little immediate consequence for the campaign in Italy, it convinced Berlin that the Allies were planning further amphibious operations along the Ligurian coast, and it reinforced the notion that the next large Allied amphibious operation would target Genoa.

Operation *Dragoon*

Operation *Dragoon*, the Allied landings on the French Riviera coast, took place on August 15, 1944.[1] They were originally scheduled to take place on the same day as the Normandy landings, D-Day June 6, 1944, but this proved impossible due to a shortage of ships and landing craft. The postponement worked to the benefit of the attacking force, since in the interim, Heeresgruppe G was stripped of many of its divisions to reinforce the Normandy fighting, seriously weakening the defenses in southern France. The *Dragoon* landings

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1 Steven J. Zaloga, Operation Dragoon 1944: France's Other D-Day, Osprey Campaign 210 (2009).

The map opposite examines the typical army defenses along one of the beaches assaulted during Operation *Dragoon*. The infantry defenses consisted of defense nests (*Widerstandnesten*), typically a platoon-sized position containing one or more antitank gun casemates, a few Tobruks, and associated trenches. On the Südwall, defense nests were usually designated by a number preceded by a prefix indic ting the sector; in this case RAP for St Raphaël. They also received codenames in some sectors. Several defense nests formed a company-sized strongpoint (*Stützpunkt*), in this case named for animals. There were two coastal artillery batteries on either side of St Raphaël. On the western side was Batterie 13, HKAR 1291 armed with four 7.5cm FK 231 (f), an improved version of the French 75mm Mle 1897. On the eastern side on Cap Dramont was a Kriegsmarine battery, 5./MAA 627, armed with three 105mm TbK C/36 in M272 casemates. This battery was still under construction at the time of the *Dragoon* landings with only two casemates complete, and it was not operational. On the hills overlooking the bay were six artillery batteries. The three batteries of II./Artillerie-Abt. 671 (mot.) were each equipped with four war-booty Italian Obice de149/19 howitzers, called 149mm sFH 404 (i) by the Wehrmacht. To the east were three batteries of Heeres-Artillerie-Abteilung 1192, each armed with four of the same types of howitzers. These batteries were manned by Italian crews and were formerly known as Abteilung Coniglio after their commander.

were preceded by several weeks of preliminary air attacks against a wide range of targets including coastal gun batteries, key bridges, and German troop concentrations.

The areas of the landing beaches were more weakly fortified than other sections of the Südwall, in no small measure due to the late start imposed by the Italian occupation of this sector in 1942–43. In the assault area from Cavalaire Bay to the Rade d'Agay, there were 29 artillery batteries with 88 guns, and 34 gun casemates in the coastal defenses, usually armed with guns in the 75mm–88mm range.

Preliminary landings by Special Forces units had mixed results. Sitka Force, consisting of elements of the 1st Special Service Force (1st SSF) landed on the islands of Levant and Port-Cros on the southern side of the landing zones to deal with suspected coastal gun batteries. Elements of 3/1st SSF quickly overran the Pointe-du-Titan site on Levant, a former French Navy 164mm gun battery site, only to discover the guns were elaborate fakes. The island's garrison, 18./ GR 917, used the old French fortifications as resistance points, but were overwhelmed. The 1/1st SSF landed on neighboring Port-Cros but had a hard time dealing with another company of GR 917 who retreated into the old Fort l'Ecussac. After naval gunfire and air attack failed to dislodge the defenders, the siege was finally broken on August 17 when the battleship HMS *Ramillies* hammered the fort with 12 rounds from its 15in. guns, convincing the stunned German garrison to surrender. Romeo Force from the French Commandos d'Afrique landed near Cavalière to disable any remaining coastal guns at Cap Nègre and occupy Le Canadel to the east.

Elements of three US infantry divisions took part in the main *Dragoon* landings. The southernmost assault at St Tropez by the 3rd Infantry Division consisted of a landing on Beach Alpha Red in Cavalaire Bay by the 7th Infantry Regiment, and Alpha Yellow to the east near Pampellone, by the 15th Infantry. This sector was defended by a battalion of Grenadier-Regiment 765 (IV./GR 765). One of the innovations developed after D-Day in Normandy was the Apex remote control demolition craft to destroy coastal obstructions.



A *Panzerdrehtürm* using a PzKpfw II turret overlooks the Operation *Dragoon* landing site.

Tactical strongpoints, Camel Beach Sector, Operation *Dragoon*, 15 August 1944





The numerous French forts along the Mediterranean coast served as the basis for German strongpoints. This is a 20mm Flak position added to the battlements of Fort de l'Eminence on Ĭle de Port-Cros, part of the Îles d'Hyères group. The earthen bunker to the right contained an infantry gun. The island was held by 17. Kompanie, Grenadier-Regiment 917 and taken by the 1st Regiment of the 1st Special Service Force during three days of fig ting in August 1944.

These were radio-controlled LCVP landing craft loaded with high explosive that were steered into the coastal obstacle belts and detonated. They were launched against the Alpha beaches around 0715hrs and managed to destroy a number of concrete obstacles. They were followed by rocket-firing craft which were primarily intended to detonate mines on the shore, which were soon followed by 38 LCVPs carrying two battalions of the 7th Infantry. Aside from the mine threat, German resistance was weak and consisted of sporadic small-arms fire. The Wehrmacht prisoners were mostly Russians, Poles, Turkomen, and other eastern troops intermingled with a small number of German officers and NCOs. The landing of the 15th Infantry on Alpha Yellow proceeded in much the same fashion, encountering weak resistance from scattered and unenthusiastic Ost troops who quickly surrendered.

The center landings against Delta beach on the opposite side of the Golfe de St Tropez were conducted by the 45th Division. This sector was defended by a company of GR 765 and a single coastal artillery battery. Since there were no coastal obstacles, no Apex craft were used in this sector. A single German 75mm gun fired a few rounds at the incoming LCVPs before being silenced by destroyer fire. Likewise, a trio of 81mm mortars in Tobruks on Cap des Sardineaux fired a few rounds before being shelled into silence. The 157th Infantry landed on Delta Red against little resistance. The 180th Infantry landed to the right on Delta Yellow and Delta Blue and did not encounter significant German resistance until it moved north up the coastal road to St Aygulf.



German coastal batteries were a considerable worry to Operation *Dragoon* planners. A newly installed battery of two powerful Schneider 220mm M17 guns on the heights of Pointe des Issambres south of St Aygulf were an especially grave threat to the landings near St Raphaël, but the guns were disabled by an air strike on August 11, 1944.

The northern landings by the 36th Division were the only ones to face serious opposition. Camel Beach in the Golfe de Fréjus near St Raphaël was guarded by unusually strong German defenses compared to the other *Dragoon* landing beaches. This was not altogether surprising as Fréjus had been a traditional invasion point since antiquity; Julius Caesar had landed there to initiate his conquest of Gaul and Napoleon had picked the same spot on his return from exile on Elba. German coastal defense doctrine emphasized the protection of ports and this area contained not only the port of St Raphaël, but also a flat beach leading into the Argens River valley that offered a direct route to key objectives such as Le Muy and Draguignan beyond. The Italian Fourth Army had recognized the significance of this location when they had occupied the area in 1940–43, and had positioned six batteries with two-dozen Ansaldo 149/19 149mm field howitzers in the heights around the port. After the 1943 armistice, these remained in service with volunteer Italian crews as "Abteilung Coniglio," named after their commander. By 1944, these had been redesignated and the three batteries west of Fréjus became I./HAA 671 (mot.) while the three emplaced batteries northeast of Fréjus became I./HAA 1192. In the weeks prior to the landings, the Kriegsmarine had begun to install a battery of the old but powerful Schneider M17 220mm guns on the Pointe des Issambres south of St Aygulf, but these were disabled by a US bombing raid on August 11 before they became fully operational. The 11./HKAR 1291 was deployed in St Aygulf in strongpoint StP. Geranie with four French 75mm guns in H671 casemates. Further to the east, the Kreigsmarine was building M272 gun bunkers for a battery at Cap du Dramont, but these had

Some of the gun casemates on the *Dragoon* beaches were extensively camouflaged like this example. This is an antitank gun bunker covering the western side of the bridge leading from Beach Camel Red towards St Raphaël. This was part of defense nest RAP015 Camille of the strongpoint Stützpunkt Tiger. As can be seen, it was hit by Allied naval gunfi e, though the concrete was not penetrated.



The Wehrmacht did not have the time or resources to fortify the Mediterranean coast as extensively as Normandy and many gun positions were improvised. This is a war-booty French 75mm Mle 36 antiaircraft gun deployed for beach defense near Ste Maxime on the left flank of ougnon Bay overlooking Beach Alpha Red in August 1944.

A US Navy sailor inspects a *Panzerdrehtürm* using a PzKpfw II turret mounted on a Bf.236 Ringstand in the defenses overlooking Cavalaire bay in August 1944. The Ringstand for these tank turret defenses was usually entirely buried since it only offered the B1 standard of protection.



not been completed by the time of the landings. Nearby, the Luftwaffe had installed Flak Abt. 481 in several batteries around Anthéor with over a dozen 88mm Flak 18 guns.

Besides the substantial artillery defenses, the Golfe de Fréjus was heavily fortified and organized as Stützpunkt Gruppe St Raphaël. This defense sector is shown in detail in the accompanying map. It consisted of four strongpoints: Stützpunkt Löwe in St Raphaël, StP. Bison in the town of Fréjus, StP. Tiger on the beach west of St Raphaël, and StP. Mammut in the area north of St Aygulf where the Argens River meets the sea. Each of these four strongpoints was in turn made up of two or three defense nests (*Wiederstandnesten*) which were clusters of bunkers, usually a platoon in strength with more machine guns, mortars, and light guns than a normal infantry formation. These defenses were occupied principally by two companies of GR 765 with the rest of the battalion in reserve around Fréjus. In addition, the army defenses were reinforced by Panzerjäger Bn. 1039 with towed 88mm PaK 43/41 antitank guns. The coastline to the northeast of St Raphaël was defended by

E DOODLEBUG GARAGE, CAMEL BEACH, STÜTZPUNKT TIGER, ST RAPHAËL, OPERATION DRAGOON, 1944

The Goliath leichte Ladungsträger SdKfz 202 (Light Payload Carrier) was developed by Borgward in Bremen based on a Pionier requirement for a remotely operated demolition device capable of carrying a 50kg explosive charge. Control of the vehicle was managed via a double-strand wire that trailed from a bobbin mounted in the rear of the vehicle that connected to a small remote-control device. The initial version as seen here was powered by a pair of electric starter motors. The later SdKfz 203 "V-motor" (*Vergasermotor*) version used a small gasoline engine and can be distinguished by the air intake on the roof. Serial production of the electric version began in May 1942 and 2,635 were completed by the end of production in January 1944. The gasoline version entered production in April 1943 and 4,929 were manufactured through early 1945. These were initially issued to special Panzer demolition companies. In 1944, they began to be issued to normal Pionier companies. In early 1944, they were also authorized for coastal defense applications with the idea of using them to attack landing craft and tanks near the water's edge. They were first en ountered by Allied forces following the landings at Anzio in Italy in January 1944. They were deployed under cover near potential landing beaches. These "garages" were based on a standard design about 2.2m in depth and 1.8m high using a sheet of corrugated metal for the roof, and available timber and earth for the remainder of the structure as shown in the accompanying drawing. This example was dug into one of the beaches overlooking the Baie de Frèjus. Over a dozen of these were discovered on the *Dragoon* landing beaches including four on Alpha Yellow and four on Camel Red. Apparently, none were used during the fig ting on the beach. They were popularly called "Doodlebugs" by US troops.



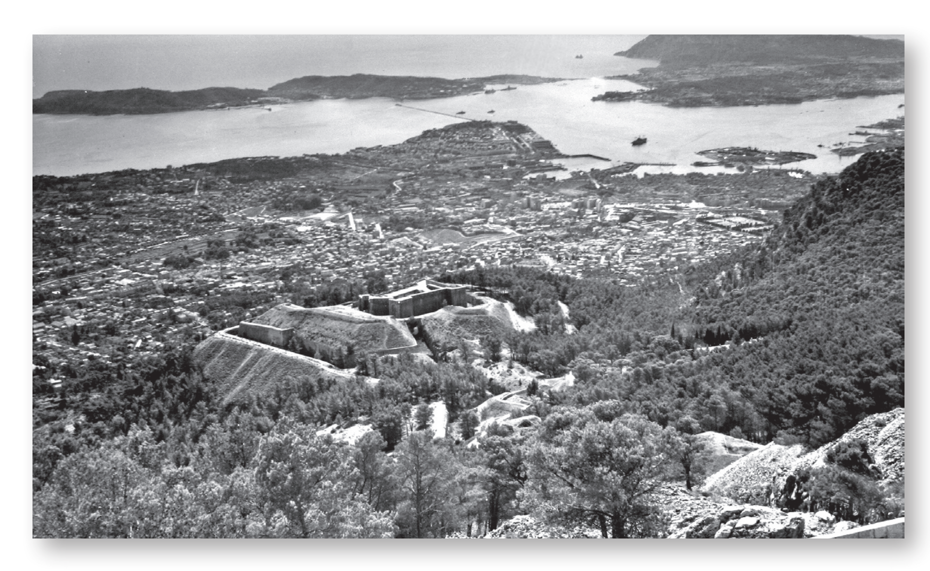


There was not enough time or resources to fortify all the beaches, and many defense nests like this one on Cavalaire Bay depended on simple earth entrenchments at the time of the Operation *Dragoon* landings.

IV./GR 239, an Ost battalion of the 148. Infanterie-Division.

The 141st Infantry landed on Camel Green and Camel Blue on the division's right, an important task since it formed the right shoulder of the entire invasion area. These beaches were away from the main German fortified zone and the Osttruppen of the IV./GR 239 did not have any enthusiasm for fighting.

The objective of the 142nd Infantry, Beach Camel Red in the center of the St Raphaël strongpoint group, was a potential deathtrap. At 1100hrs, US Navy minesweepers attempting to clear the deep-water channel leading into the port were heavily shelled by German shore defenses and artillery and forced to retire. Ninety B-24 bombers dropped 200 tons of bombs onto the Camel Red sector shortly after noon to suppress the defenses, but when the minesweepers returned around 1235hrs, they still faced heavy fire. Apex drones were sent towards shore in hopes of blowing up beach defenses but most went haywire and some had to be sunk by destroyers when they veered back out to sea towards the fleet. A naval bombardment of the coast followed, but when the landing force reached within 3,000 yards of shore around 1400hrs, it still came under intense German artillery fire. The navy commander leading the landing craft of the Camel Red Assault group decided to temporarily halt the attack and senior commanders decided to divert the 142nd Infantry to Camel Green, avoiding a repeat of "Bloody Omaha" that had occurred during the D-Day landings two months before. The German defenses in this sector were later cleared from the land side during intense fighting by the 36th Division on August 16. Allied casualties on D-Day have never been carefully tabulated due to incomplete records, but were modest, about 95 killed and 385 wounded.



This is a view from the perspective of French troops approaching Toulon from the mountainous land side in August 1944. In the immediate foreground is Fort de la Croix Faron, built in 1872–75 on Mont Faron and captured in 1944 by the Battalion de Choc. The St Mandrier peninsula in the upper left seems disconnected from the mainland as the narrow Les Sablettes isthmus is hidden in the mist and glare. The high ground in the upper right is the Cap Sicié peninsula.

Festung Toulon

Allied plans assigned the reduction of the German coastal defenses to the Free French forces, Gen. Jean de Lattre de Tassigny's Armée B, later called the First French Army (1ere Armée). The first phase was to overcome the fortified port of Hyères. The town was held by the Ost battalion of GR 918 made up mostly of Armenian troops. A French regimental combat team began the attack on Hyères on August 19 and the main resistance in the town collapsed by the early evening of August 21. Naval bombardment of several isolated forts on the offshore islands continued for several days before the Armenian troops surrendered. The German garrisons on Porquerolles surrendered on August 21 due to bombardment from the USS *Eberle* and USS *Omaha*. The Kriegsmarine coastal battery from MAA 627 on Cap de l'Esterel remained active in spite of continual naval bombardment until finally surrendering on August 23.

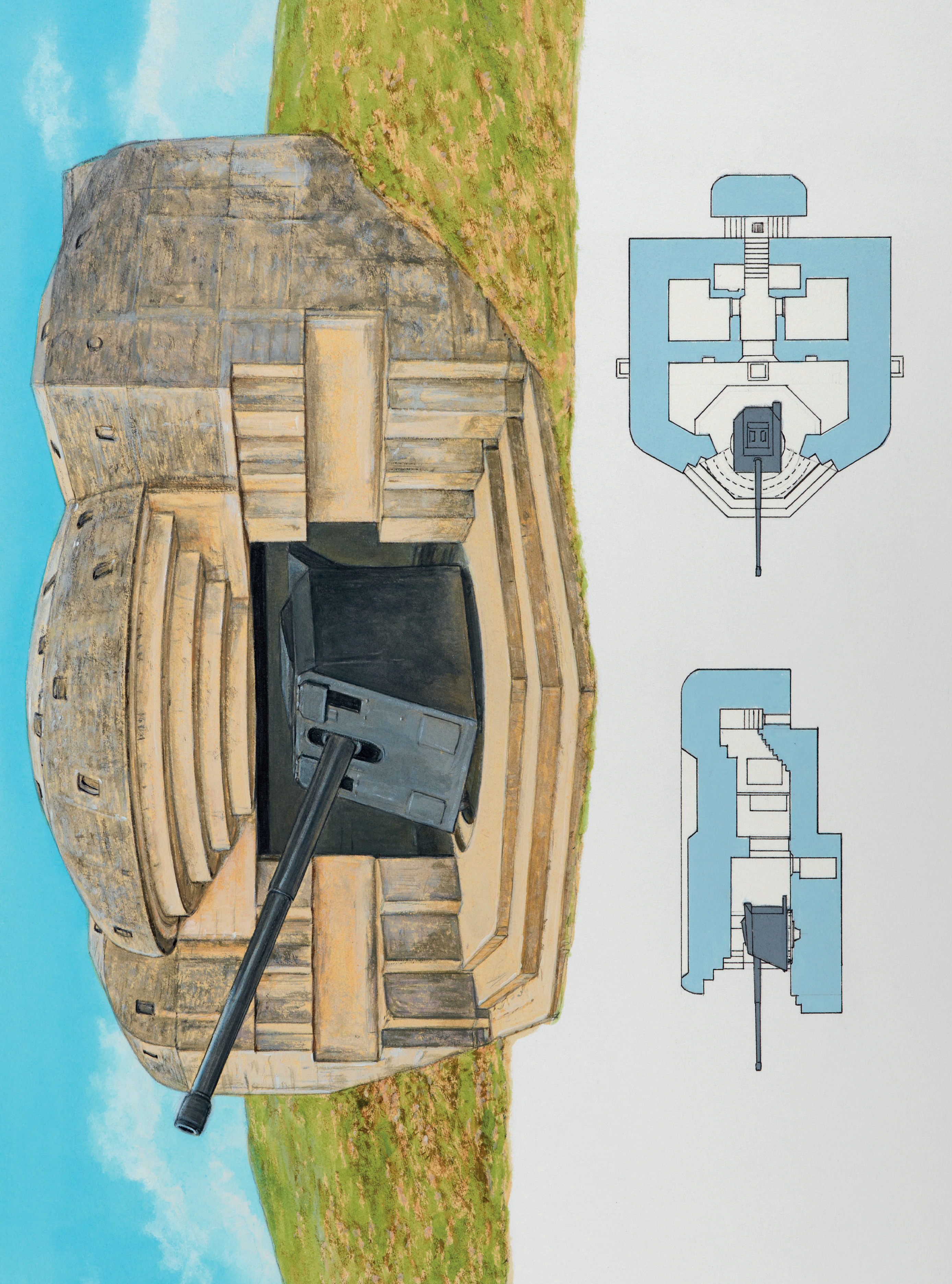
The port of Toulon was so heavily guarded by coastal artillery that no serious thought was given to an amphibious landing. Instead, the plan was to seize the port from the land side. The envelopment of Toulon began by the 3e Division d'Infanterie Algeriénne on August 19. This port is in the cusp of mountainous outcroppings both north and south, with Mont Faron to the north of the city. The port was heavily defended by coastal batteries, but these had very limited value in the ensuing campaign because the casemated guns were limited to a seaward firing arc when the attack came from the landward side. The German garrison numbered about 18,000, which included about 5,500 naval troops and 2,800 Luftwaffe troops plus a single battalion of the 242. Infanterie-Division.

Three French columns moved on Toulon through the mountainous northern approaches to the city. The high ground over the city had been heavily fortified for centuries with substantial stone fortresses. There was heavy fighting for the forts of Le Coudon by the French Commandos and Mont Faron by the Battalion du Choc of the 3e DIA for much of August 22–23. By the end of August 23, the fortifications in the hills to the north of the city had been overcome and the port enveloped on three sides.

The German Army defenses in Toulon were centered around the old bastions of Ste Catherine, d'Artigues, de Malbousquet, and Lamague, with the caves of the Poudières (powder magazine) serving as a staging area. By the afternoon of August 23, French troops had reached the center of the city and forced the surrender of the Le Mourillon arsenal. The following day saw the gradual capitulation of the old French bastions and forts with the Arsenal Maritime surrendering at 0900hrs, Fort Ste Catherine at 1000hrs and Fort St Louis at 1300hrs. Although most of the city proper was taken by the end of the day, there were still substantial German defenses in the port area, on the St Mandrier peninsula, and on the Sicié peninsula to the southwest. Fighting on August



This is a fortified oadblock covering the road at Les Sablettes, the narrow isthmus that led from Toulon into the St Mandrier peninsula. The fortific tions are a mixture of prewar French and wartime German construction.



25 and 26 cleared most of the Sicié peninsula, leaving only the naval fortifications on the St Mandrier peninsula. Fighting by the 9e Division d'Infanterie Coloniale continued until the late afternoon of August 27 when a temporary ceasefire initiated negotiations for the capitulation of the last German troops. The last hold-out was the garrison on the St Mandrier peninsula, as detailed below. The fighting for Toulon cost the French 2,700 dead and wounded while the Wehrmacht had lost a few thousand killed and 17,000 prisoners.



Turm Cäsar of the Cap Cépet battery was damaged early in the campaign when a 2,000-pound bomb struck the forward left turret side, jamming the traverse. Subsequent strikes knocked off the rear turret plate as well.

The battle for the St Mandrier Peninsula

The most violent fighting on the Südwall took place on the St Mandrier peninsula. This peninsula emanated from the southwestern side of Toulon, shielding the inner harbor (Petite Rade). It contained the heaviest concentration of German coastal artillery, amounting to about 11 percent of German coastal artillery from Nice to Marseille. This included 15 coastal defense batteries with 43 guns in the 75mm–340mm range, three dual-purpose batteries with 14 Flak guns, and six light Flak batteries with 13 guns. The most powerful guns on the peninsula were the two turrets at Cap Cépet. Both barrels of Turm

F M272 150MM GUN CASEMATE, BATTERIE RADE D'HYÈRES, 3./MAA 627

The M272 naval gun casemate with the 150mm Tbts.K C/36 destroyer gun is one of the classic Atlantic Wall bunkers, and especially well known since a battery of these is preserved at Longues-sur-Mer on the Normandy coast. A total of 81 of these casemates were built on the Atlantic Wall of which 35 were built on the Südwall. This was a relatively late design, being released in the final qua ter of 1943. Each casemate required 745 cubic meters of steel reinforced concrete and 38 tonnes of steel and steel reinforcing rods. The 150mm destroyer guns were a standard Kriegsmarine type and had an effective range of 19.5km. These batteries were generally based around four M272 gun casemates, and associated M262 fi e control bunkers, and several smaller support bunkers.

The Hyères battery, also known as the Mauvannes battery, was located on the site of an old French fortific tion which covered access to Hyères from the east. The 1904 French battery was armed with three 270 mm Mle 1889 mortars; they were dismantled after the Great War. The site was well suited to the coastal defense role since it covered the Bay of Hyères and the Gulf of Giens. Work started on the new battery in September 1943 and when completed it was operated by the 3. Batterie, MAA 627, commanded by Oberleutnant (MA) Ernst Gfrörer. The battery consisted of two officers, 17 NCOs, and 124 naval artillerymen. The first th ee guns of the battery were ready for operation on May 21, 1944, and the battery was fully operational by July 1944. Besides the four main guns, the battery had two 150mm searchlights for night illumination, three 20mm Flak guns for air defense, and three machine guns and three mortars for site defense. The gun casemates were covered with an elaborate camouflage cu tain that is shown in the accompanying photos. The illustration here shows the basic casemate without the camouflage in pla e. As can be seen on the architectural plans, each casemate included two chambers behind the main fig ting position for ammunition stowage.

The Hyères battery was bombed by Allied aircraft on August 12 and 14, 1944. Following the August 15 Allied landings, the battery attempted to engage Allied minesweepers and fi ed intermittently at Allied ground troops. After a short-lived attempt by elements of the US 3rd Infantry Division to take the site, the mission was handed off o Capitaine Paul Ducournau's 1e Commandos d'Afrique. After a preliminary naval bombardment on August 18, the French troops carefully infilt ated into the battery site, avoiding the minefield . Although the first wo casemates were quickly captured, the fig ting for the site intensified as it had been einforced by infantry from III./GR 917. The French troops, although outnumbered, finally captu ed the site by 1730hrs. The "mad attack" was later recreated in 1945 by a French Army film eam at the original site, and the casemates are still in place today.

Cäsar were functional, but only the right barrel of Turm Friedrich was operational. The Allies were well aware of the power of the Cap Cépet batteries, and some thought was given to staging a Special Forces raid against the turrets using the French Commandos d'Afrique. However, this was rejected in favor of air attack.

The initial attacks on the peninsula were conducted by bombers of XII Tactical Air Corps starting on August 13, two days before the start of Operation *Dragoon*. The most intense days of air action were on August 17, when B-26 Marauder bombers conducted 130 sorties against the Toulon area. The air attacks continued for the duration of the campaign, and Cap Cépet alone was hit by 541 tons of bombs.

Air bombardment of Cap Cépet		
	Bombs	Type (pounds)
13 August 1944	43	2,000
16 August 1944	111	2,000
17 August 1944	76	1,000
18 August 1944	96	2,000
18 August 1944	224	1,000
19 August 1944	148	1,000
20 August 1944	24	2,000
20 August 1944	87	1,000
Total	809	1,083,000

The first combat actions by the Cap Cépet batteries occurred on the afternoon of August 16 in response to the advance of French troops towards Toulon. Eight rounds were fired against the towns of Collobrières and Puget-Ville. This led to another air strike by 39 B-26 Marauder bombers of the 42nd Bomb Wing, and at 1704hrs, Turm Cäsar received a direct hit from a 2,000 pound bomb. This detonated on the left front side armor plate, deforming the turret race and preventing the turret from traversing. As a result, only the single gun from Turm Friedrich remained active at Cap Cépet for the following weeks of fighting.

The Western Task Force deployed the Support Force, Task Force 86 for gunfire support of the Allied land forces. This included three battleships, 12 cruisers, and 13 destroyers. For the first few days after the *Dragoon* landings, TF 86 bombarded the coastal batteries on the eastern approaches to Toulon, especially the numerous strongpoints around Hyères. Since the Seventh US Army was advancing inland up the Rhône valley, most of these missions supported the French advance along the coast. On August 19, TF 86 conducted a reconnaissance-in-force to test the Toulon defenses following another wave of air strikes against Toulon harbor and St Mandrier. The battleships USS *Nevada* and FS *Lorraine*, and

This wartime reconnaissance photo shows the locations of the principal German gun batteries on the St Mandrier peninsula: 1) MKB St Elme of 3./MAA 682 [4 x 138 mm]; 2) MKB Cépet of 4./ MAA 682 [4 x 340mm]; 3) MKB Croix des Signaux of 5./MAA 682 [4 x 164mm]; 4) MKB Renardière of 2./MaFlA 819 [4 x 105mm Flak]; 5) Creux St Georges of 5./ MaFlA.819 [6 x 37mm SKC/30 Flak]; 6) StP Lazaret of 1./Flak-Abt. 355 [6 x 88mm Flak 18]; 7) Fort Cépet of 6./Flak-Abt.355 [4 x 88mm Flak 18].

the heavy cruiser USS *Augusta* along with a screening force of destroyers conducted about an hour of bombardment. The response from the batteries on Cap Cépet was described as "slight." The two Cap Cépet turrets were given the anonymous designations of Targets K-20 and K-21, but Turm Friedrich was more widely known as "Big Willie" by the US Navy.

Fire support missions continued over the next several days, though TF 86 was obliged to spread its warships around the coast, with much of the action occurring in the Rade d'Hyères to the east of Toulon. During the actions on August 20, Turm Friedrich fired about ten rounds against the Allied warships, with three rounds coming within 300m of the French destroyer *Le Malin*. In total, Turm Friedrich fired 218 rounds against the Allied warships, with the crew later reporting that a peak of about 60 rounds had been fired on one day. One of the 164mm gun batteries remained very active through the gun duels.



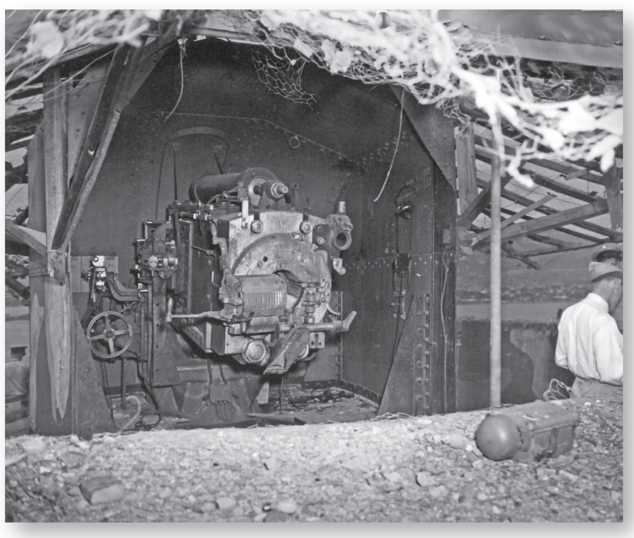
The Cap Cépet battery site resembled a lunar landscape after the intense Allied air and sea bombardment in August 1944. This is Turm Cäsar as viewed from an Allied reconnaissance overflig t.

During the actions off St Mandrier, the French warships *Fantasque* and *Georges Leygues* were both hit and suffered a few wounded; no Allied ships were lost to German coastal gun fire. On August 23, 1944, the battleship USS *Nevada*, armed with ten 14in. guns, engaged in a gunnery duel with "Big Willie" that lasted over six and a half hours. The US battleship fired some 354 salvos at the fort. TF 86 started its main effort against the St Mandrier batteries on August 25, firing 758 rounds of various calibers, or nearly three-quarters of all rounds against Cap Cépet during the campaign. By this stage, many of the German batteries were no longer functional. In total, the Allied warships fired some 8,698 projectiles of various calibers against the St Mandrier defenses, including about 1,400 from 8in. guns or greater caliber. Of these, about 1,084 rounds were aimed at the two Cap Cépet turrets, of which 692 rounds were of 8in. or greater caliber.

The attacks on the St Mandrier peninsula led to the speedy attrition of numerous German gun batteries. Many of the crews spent the weeks of bombardment in the numerous subterranean tunnels and bunkers. On the



The Batterie de La Croix des Signaux was a prewar French navy installation that covered the entrance to the Toulon inner harbor. It was based around four 164mm Mle 93-98 naval guns and operated by 3./MAA.682 as part of Stutzpunkt Tor 038W. They are seen here in late August 1944 after their camouflage umb ellas had been blown away by the Allied naval bombardment.



A close-up of the interior of one of the 164mm Mle 93-98 gun turrets of the Batterie de La Croix des Signaux, mounted on the Affût C Mle 1923 pedestal with armored shield.

evening of August 22, Konteradmiral Heinrich Ruhfus, the commander of the Toulon garrison, shifted his command post from the Boudouvin estate in Toulon to the St Mandrier peninsula, taking over the MAA 682 command center. By August 27 when most of Toulon surrendered, the heights of St Mandrier were a lunar landscape from the intense bombardment. Only a single 88mm gun was operational. The French Army was building up its forces at Les Sablettes, the narrow isthmus that led from Toulon on to the peninsula. Ruhfus realized that any further fighting was pointless, and the remaining 1,800 German troops in the St Mandrier garrison surrendered at 0600hrs on August 28.

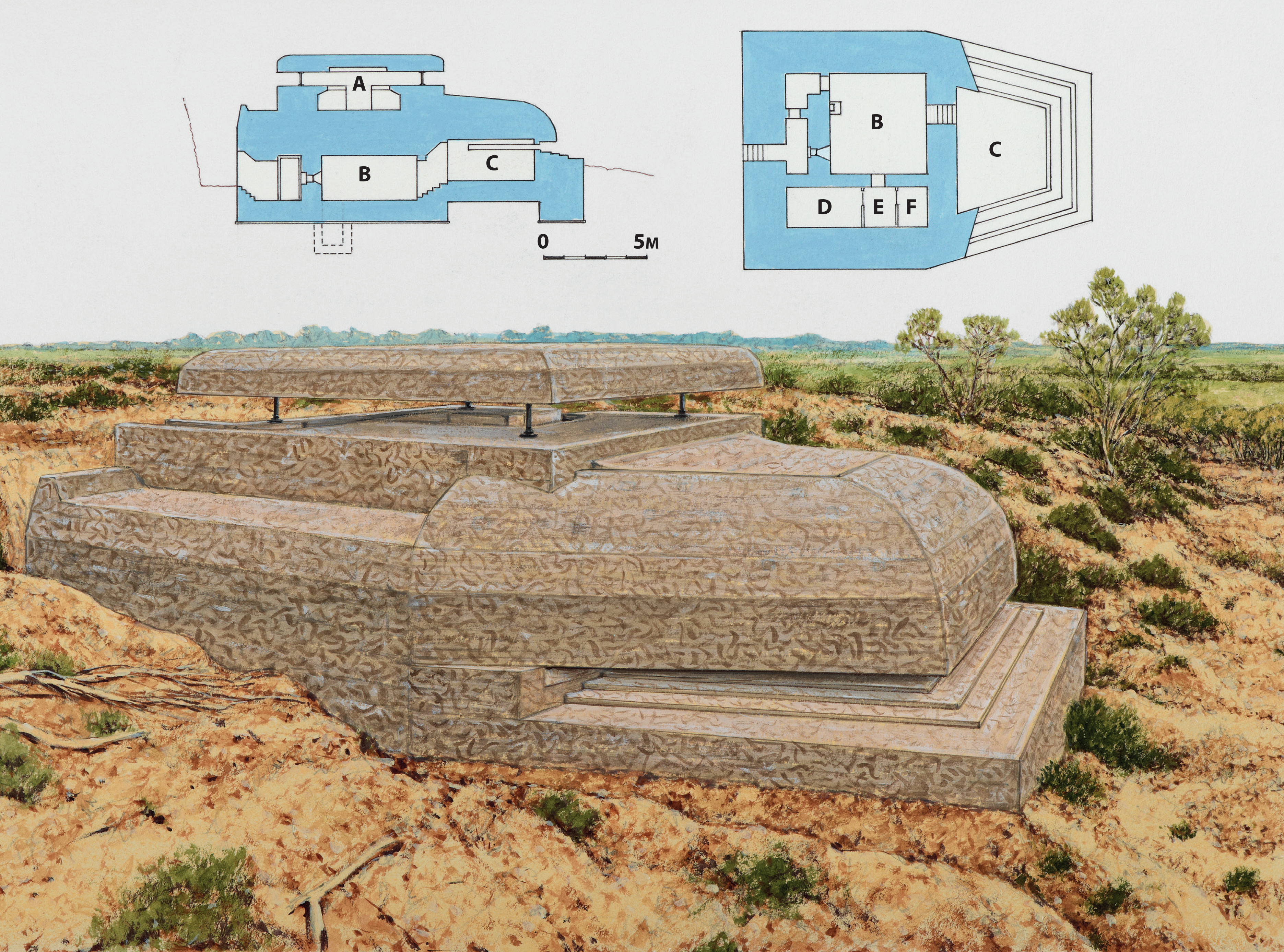
Festung Marseille

While much of the 3e DIA took part in the liberation of Toulon, the division's Chapius group headed for Marseille on August 20 along with the tank columns of the 1e Division Blindée. Marseille did not enjoy the formidable natural defenses of Toulon, though like much of Provence, the terrain beyond the city was mountainous and wooded with the heights along the outer defense ring typically at elevations of 800m. The French advance enjoyed almost complete freedom of movement because the concentration of German forces on the coast had left the major road network virtually unguarded except for military police units. Marseille was held by elements of the 244. Infanterie-Division and the garrison numbered about 13,000 including 2,500 Kriegsmarine and 3,900 Luftwaffe personnel. The German commander, Gen. Lt. Hans Schaefer, was not convinced of the value of the numerous coastal defenses in the port or in the heavily fortified area of Ciotat to the southeast, and so he ordered the Kriegsmarine to convert most of these troops into infantry and to deploy them in the second line of defense.

G M262 LEITSTAND, BATTERIE RADE D'HYÈRES, 3./MAA 627

This plate shows the fi e control post of the Hyères battery covered in the other plate of the M272 gun casemate. The M272 *Leitstand* was a typical Kriegsmarine design and it was designed to identify, track, and designate targets for the battery. The basic design was approved at the same time as the associated M272 gun casemate in late 1943. The design required the use of 720 cubic meters of concrete.

Two-story posts like this one had a rangefinder post on the top (A), an observation deck in the lower front (C), and calculation room (B) on the lower level. The rangefinder post could use a variety of stereoscopic rangefinder , usually warship types mounted on sockets. The observation deck had a variety of fi ed observation devices for target tracking, usually a pedestal-mounted optical sight for determining bearing with the data passed electrically to the computing room below. The heart of the fi e control post was the calculation room, which contained the devices used for obtaining fi ing solutions as well as the communication system to the gun casemates and higher headquarters. The compartment mimicked the fi e control on a warship, but due to the fi ed position of the battery, the fi ing computations were less elaborate than on a moving warship. The computing room received data from the observation decks which were entered into the fi e direction computer (*Rechenscheiber*) and then integrated with bearing data from an adjacent bearing computer (*Kleingerät*), obtained from the observation deck. A plotting-board maintained range and defle tion data. Once the target's range, bearing, and speed were determined, a fi ing solution was computed and passed to the individual guns via a special switchboard (*Schaltkasten*) located in the adjacent communication room (D). Next door was a small radio room (E) for communication with higher headquarters, and a small room for the officers (F).


A
B
C
0
5M
B
C
D
E
F



A good example of a war-booty French APX-1CE turret from a Somua S35 tank mounted as a *Panzerdrehturm* on a Ringstand as part of the defense belt along the Marseille coast.

French forces reached the outskirts of Marseille on August 21, which led to the start of a disjointed popular insurrection and the establishment of a "provisional government" within the city. In reality, the French insurgents did not have the strength to wrest control of the city from the Germans, but the Germans did not have the strength to suppress the revolt. On August 22, the 7e Régiment de tirailleurs algériens of the 3e DIA advanced through most of the eastern suburbs against little opposition, and on the morning of August 23 they were coaxed into the heart of city to the acclaim of the growing French crowds, reaching the waterfront by evening. The fighting for the city took three days. The German garrison remained ensconced in the numerous fortifications along the seacoast as well as in the heights near the Notre-Dame-de-Garde basilica. On August 25, the remainder of the 3e DIA that had been fighting in Toulon arrived in the southeastern region of Marseille and overwhelmed many of the holdouts.

During the fighting, the French forces came under fire from the three railroad artillery batteries of EAA 640 that were located further west. Prior to a French attack to clear out the railroad artillery, they retreated up the Rhône valley. They were trapped around Coucourde on August 23 when the tracks further north were hit by Allied air strikes, and the guns were abandoned.

German coastal artillery positions on the Île Ratonneau and Île Pomegues off the coast were pummeled by both Allied air attack and warships. The strongholds around Fort St Nicolas capitulated on August 27 after being subjected to point-blank fire from French field artillery. By now, the French actions were mostly mop-up operations of the numerous small German strongpoints scattered around the city and in its suburbs. French casualties were 1,825 men killed and wounded and about 11,000 German troops surrendered. Marseille became the main Allied port in southern France and in combination with the other southern ports accounted for nearly a third of the Allied cargo delivered to the European Theater of Operations through the end of the war.

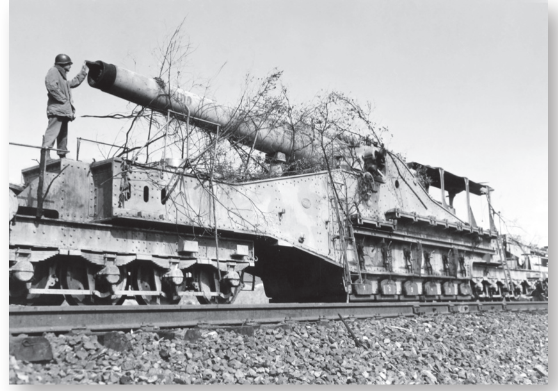
The Vieux Port area of Marseille had been heavily fortified or centuries, with the defenses deepened by the Wehrmacht. This *Panzerdrehturm* used a turret from a PzKpfw II Ausf. B or C, upgraded with a commander's vision cupola and its Ringstand was built into the foot of Fort St Nicolas near the entrance of the harbor.



The Ligurian Wall

Allied deception operations continued after Operation *Dragoon* to keep the Germans convinced of potential plans to





invade northern Italy along the Ligurian coast, and especially at Genoa. The main motivation for this program was to tie down German forces in Italy.

In the wake of Operation *Dragoon*, the US Navy's Western Naval Task Force was dissolved. Elements of TF 86 remained to patrol along the northern Mediterranean and to engage German forces along the Ligurian Wall. It was subsequently called Flank Force Mediterranean. At first, the force was primarily French, based around the warships *Montcalm*, *Georges Leguyes*, and *Gloire* as well as several destroyers and smaller warships. It was reinforced by US Navy and Royal Navy torpedo boats, and later by some US destroyers. Flank Force continued to harass the German batteries along the Ligurian coast until the end of the war. The large gun batteries on Monte Moro above Genoa came under siege by Italian partisans in the final weeks of the war. The Ligurian Wall was swept by the advance of the US Army's 92nd "Buffalo" Infantry Division in late April 1945.

LEFT
This *Panzerdrehtürm* was set up to cover parts of the Marseilles port. It was based on a war-booty French APX-R turret mounted on a Vf.25 Ringstand. This type of turret was used on the R35 infantry tank and the H39 cavalry tank. This example was built near Avenue Vaudoyer with the Quai de la Tourette dockyard on the left and the Cathédrale Sainte-Marie-Majeure de Marseille evident in the background to the right.

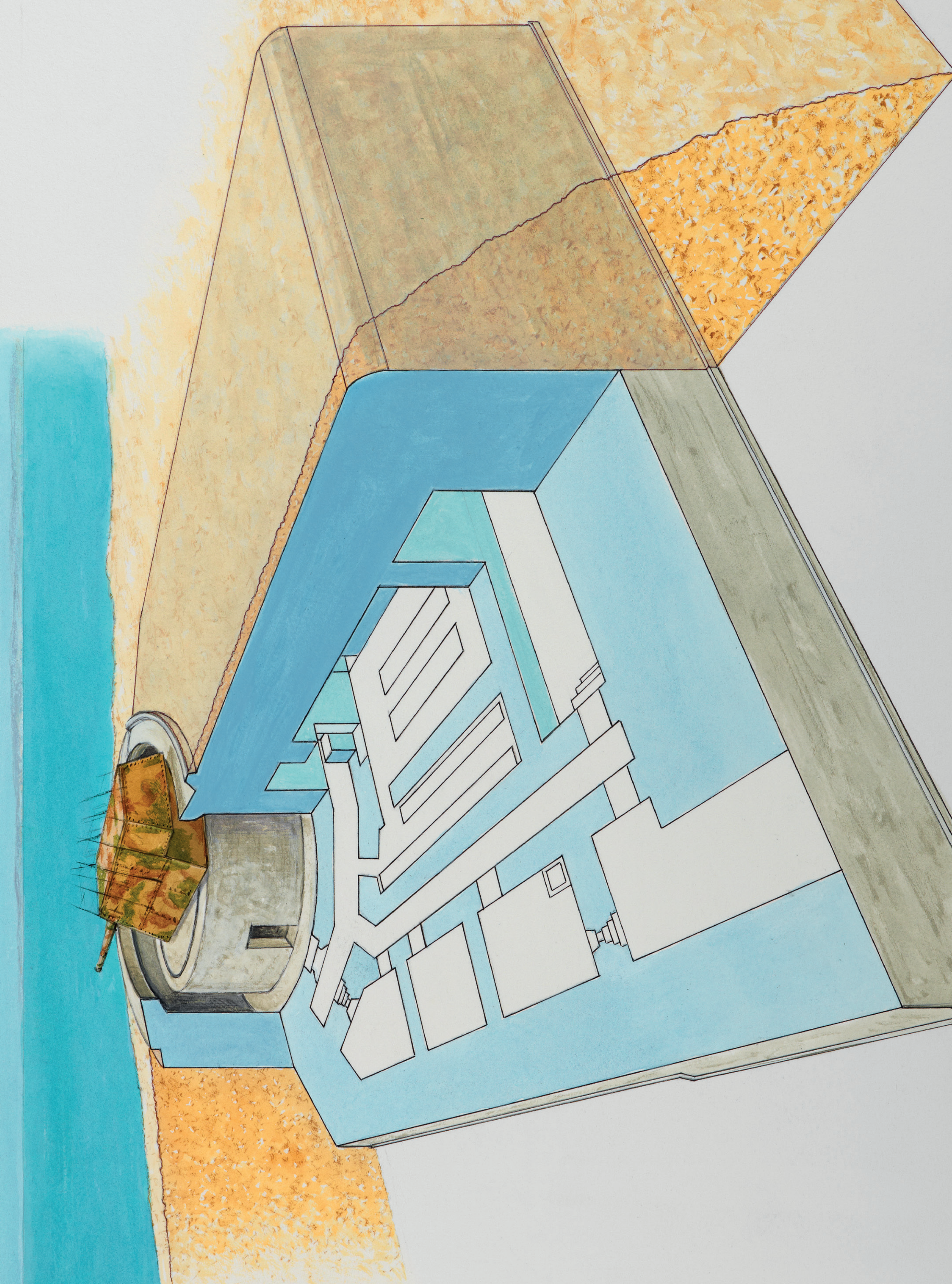
RIGHT
"Bruno," a 274mm K(E) 592 (f) was one of three such war-booty French railway guns of Eisenbahn-Batterie 692 stationed near Châteauneuf that took part in the bombardment of Marseille in August 1944. It was one of six such French guns in German service and is seen here after its capture in August 1944 near Coucourde in the Montelimar pocket.

Aftermath

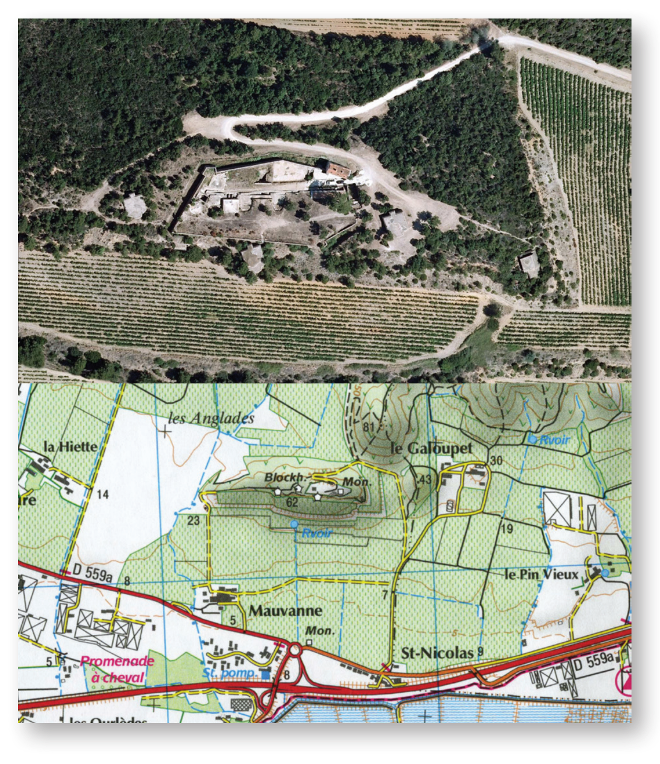
The Südwall collapsed more quickly than the Atlantic Wall in northern France, due to the shortage of troops as well as their poor quality. With the exception of the defenses at Beach Camel Red, none of the strongpoints along the *Dragoon* landing beaches had much impact on combat operations. The defenses in Toulon and Marseille were more formidable, but these were more a tribute to previous French Navy fortification efforts than to the German construction effort.



A good example of an H671 gun casemate, built as part of the strongpoints of the HKAA.956 at Viareggio, Italy as part of the Ligurian Wall. It has a particularly elaborate *trompe-l'oeil* foliage camouflag . These gun casemates had not been completed at the time the area was overrun by the Fifth Army in August 1944.



THE SITES TODAY



There are fewer published surveys of Südwall bunkers than other elements of the Atlantic Wall. This is due to the relative obscurity of Operation *Dragoon* compared to Operation *Overlord*. There are numerous Atlantic Wall museums in Normandy, the Pas de Calais, Belgium, the Netherlands, and Scandinavia, but hardly anything in southern France. A contributing factor to this disparity was the establishment of many of the Südwall sites on former French Navy posts. After the fighting, the French Navy re-established control over these sites, and in many cases has retained these bases to the present. So, many structures of the Südwall remain on closed French naval bases. Even on the French bases, many sites have been dismantled. The Cap Cépet batteries and other batteries on St Mandrier were disarmed in the 1940s except for some of the Flak batteries; these too succumbed with time. Many of the gun batteries around Toulon, Marseille, and other ports have been absorbed by urban expansion over the past seven decades.

The sites along the *Dragoon* invasion beaches have been overwhelmed by development and the tourist trade. The French Riviera is far better known for its sunny beaches than for Operation *Dragoon*, and many Südwall bunkers have disappeared over the years. A few of the larger bunkers survive, for example the Cap Dramont naval battery's gun casemates. There are many interesting Südwall bunkers still worth seeing, but they are a greater challenge to locate and visit than in prime Atlantic Wall venues such as Normandy. For example, the Mauvannes battery is still in place, minus its guns, due to its place in French Army history.

There are several worthwhile tools to assist bunker detectives. Many of the surviving bunkers lack any local road signs, and there are no handy guides to the Südwall beyond the books mentioned below. Furthermore, most of the books treat the Südwall in its historical context, not in terms of

The French Institut Geographique National maps in 1:25,000 scale frequently identify surviving bunkers as seen here with the Mauvannes battery identified y the fortific tion symbols and "Blockh." This is from map IGN 3446 OY Hyères-Île de Porquerolles. The Internet app Google Earth is invaluable in providing additional information on field onditions and roads in an area before visiting the site as seen here with an image of the Mauvannes battery. The Google Earth photo feature frequently contains images taken of the site by tourists, further enhancing its value for bunker hunters.



BATTERIE RATONNEAU, STÜTZPUNKT MAR 195A, MARSEILLE, 1944

The Batterie Ratonneau was created by the Kriegsmarine to defend the approaches to Marseille. This was based on a design also employed at the Batterie Muschel of the 5./MAA 284 that covered the Gironde river estuary on the Atlantic coast. The Batterie Ratonneau was constructed on old French forts from the 1886–89 program. The plan was to create four new turrets armed with four 24cm KM 02-06 (f) French naval guns that had originally armed the old battleships *Danton* and *Mirabeau*. The new turrets were designed using armor plate from the old warship Condorcet that was being dismantled in Toulon harbor. The guns were mounted in massive S542 gun pits with an associated underground ammunition bunker, built to the heavy Baustärke A standards. Although work on the S542 bunkers was largely complete by the summer of 1944, the first gun as not mounted until July 1944, and the plates of the armored turret began to be installed in August 1944, shortly before the Allied invasion. None of the turrets were completed prior to Operation *Dragoon* and the battery was not operational in time for the battle for Marseille. The illustration here shows how the battery would have appeared if it had been completed.

surviving examples. Some do show surviving bunkers, but not in the fashion of a convenient guidebook. The ever-useful *After the Battle* magazine devoted issue Number 110 in 2000 to "The Riviera Landings" and it has useful information for anyone visiting this section of the coast. Preparation prior to a visit is essential.

One of the most useful is the French Südwall Internet site (sudwall.superforum.fr) which contains a wealth of information about surviving sites. For those without a reading knowledge of French, the French websites can be used in conjunction with Google Translate. Two other invaluable tools are the maps of the French IGN (Institut Geographique National) and the Google Earth website. The IGN maps are widely available in France as well as by purchase over the Internet. The 1:25,000 scale IGN maps often depict major surviving bunkers, sometimes with a fortification symbol and the annotation "anc. batt." (*ancienne batterie*: old battery) or "Blockhaus". This helps to localize the battery position. While it might seem that these maps are more than enough to locate a site before a visit, I have often found this not to be the case. Batteries located near the seashore are usually quite visible and easy to find. However, many structures have become enveloped in construction over the years, or covered by vines and other vegetation. Spring is a good time for bunker hunts, since foliage is at its nadir. To help localize the bunkers beyond the rough map locations, I usually use Google Earth prior to any bunker hunt. This provides a much finer level of detail and also helps to pinpoint the location of the bunkers relative to other structures as well as local paths and roads. The level of detail on Google Earth is quite good, and gun casemates and even some Tobruks can be discovered easily in this fashion. Another handy feature of Google Earth is the associated photo tool where tourists post photos they have taken near many sites. This often includes photos of the bunkers. Indeed, the hunt for bunkers can be done quite enjoyably from a home computer without stepping foot in France.

FURTHER READING

The Südwall has not received as much attention as other segments of the Atlantic Wall, especially compared to Normandy. The Südwall construction program was of much shorter duration than other stretches of the Atlantic Wall, with correspondingly fewer major structures. There are numerous articles on the Südwall in French military journals, with good coverage in the French military magazine *39–45*. The Chazette books on the Südwall Kriegsmarine coastal batteries and on the forces of the AOK 19 are the two essential sources on this subject, and provide encyclopedic treatment of the Kriegsmarine sites. Coverage of the army sites is still spotty. The US Army Foreign Military Studies program included several reports by senior German commanders involved in the Südwall and Ligurian Wall, and help provide the German perspective on this subject. The Ligurian Wall is more poorly covered than the Südwall. The Faggioni book provides a useful overview of the subject from the Italian perspective and covers the surviving bunkers. However, it lacks much detail on the German efforts after September 1943. For this aspect, I used the surviving German records at the National Archives and Records Administration (NARA II) in College Park, MD, primarily the

records of the LXXV Armee Korps in the Record Group 242 microfilm collection. There is a considerable amount of detail on the defenses in the Operation *Dragoon* beach areas in US Army and US Navy records. I used the Seventh US Army G-2 records, as well as the microfilm US Navy 8th Fleet records at NARA.

US Navy unpublished reports

Invasion of Southern France: Report of the Naval Commander, Western Task Force (Commander 8th Fleet, November 1944)

Report on Saint-Mandrier (Commander 8th Fleet, October 1944)

Survey of Assault Beaches, Invasion of Southern France, 8/15 - 16/44 (Commander 8th Fleet, October 1944)

US Army foreign military studies

Hoffmann, Generalmajor Heinrich, *The Artillery of the LXXV Corps on the Ligurian Coast – April to June 1944* (D-026)

Kesselring, Generalfeldmarschall Albert, *Fortifications in Italy after Italy's Surrender* (C-013)

Ruhfus, Adm. Heinrich, *Toulon Naval Commander 21 April–28 August 1944* (B-556)

Ullersperger, Gen. Wilhelm, *Nineteenth Army Fortress Engineer: 1943–Aug 1944* (B-449)

Vogel, Gen. Walter, *Nineteenth Army Artillery: 4 April–18 August 1944* (B-575)

Books

Chazette, Alain, *L'Armée allemande sur la Côte Méditerraneenne: AOK 19 Mittelmeerküstenfront* (Histoire & Fortifications, Paris: 2004)

——, *Atlantikwall-Südwall: Sur les traces du temps* (Histoire & Fortifications, Paris: 2003)

——, *Atlantikwall Südwall: Special Typologie* (Histoire & Fortifications, Vertou: 2012)

——, *Mur de l'Atlantique: Batteries de côte série 600* (Histoire & Fortifications, Vertou: 2014)

——, *Südwall: Batteries côtières de Marine* (Histoire & Fortifications, Vertou: 2009)

Clerici, Carlo, *Le difese costiere italiane nelle due guerre mondiali* (Storia Militare, Parma: 1996)

Coari, Gianfranco, *Bunker dell guerra sul Monte di Portofino: Die 2.Marine-Küsten-Batterie "Chiappa"* (il Geko, Genoa: 2014)

Faggioni, Gabrielle, *Il Vallo Ligure: La linea difensive allestita dalle forze nazifasciste dopo l/8 settembre 1943 lungo le coste liguri per preventire un sbarco alleato* (Ligurpress, Genoa: 2010)

Felli, Ruggero Elia, *La sentinella avazanta: Le difesa costiere dell'Isola d'Elba nel secondo conflitto mondiale* (Bandecchi & Vivaldi: Pontedera: 2012)

Potočnik, Aleksander, *Fortifying Europe's Soft Underbelly: The Rupnik Line, the Vallo Alpino and other Fortifications of the Ljubljana Gap* (Merriam, Bennington: 2009)

Ribière, Henri, et al., *La route des fortifications en Méditerranée: Les étoiles de Vauban* (Huitième Jour, Paris: 2007)

Rolf, Rudi, *Atlantikwall: Batteries and Bunkers* (Prak, Middelburg: 2014)

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